NATUR CYMRU

A Review of WILDLIFE in Wales

Rhif/Number 12 • Hydref/Autumn 2004

- Would woodpeckers pose for peanuts?
- Ospreys are here
- Mountains of mushrooms
- Needle exchange – from plantations to semi-natural habitats
- From brown to green and back again
- Dyddiadur Dronwy
- Apple detectives needed
- Teifi Marshes Nature Reserve – where the buffalo roam

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A Review of WILDLIFE in Wales

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Bwriedir i *Natur Cymru* hyrwyddo a chyfnewid gwybodaeth am fioamrywiaeth a hyrwyddo dadl. Nid yw'r farn a fynegir yn y cylchgrawn hwn o anghenraid yn farn y noddwyr. Os oes gennych wybodaeth, erthyglau neu waith celf y credwch a allai fod o ddiddordeb i'r darllenwyr, cysylltwch â'r Golygydd os gwelwch yn dda.

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Golygyddol

Nid oes unrhyw beth sy'n ein cysylltu â byd natur yn fwy cadarn, nac yn ein hatgoffa o'n bioleg anifeilaidd yn fwy clir, na bwyd. Tynnwch ymaith ddylanwadau dieithriol busnes amaeth, prosesu bwyd ac adwerthu, ac fe ddaw'n glir y dylai pryder ynglŷn â'r bwyd yr ydym yn ei fwyta a phryder ynglŷn ag iechyd byd natur fynd law yn llaw.

Mae yna ddigon yn y rhifyn hwn i ddangos uniad hapus bwyd a natur. Mae hanes ein hen isrywogaethau afalau Cymreig yn ein hatgoffa o'r rhinweddau yr oedd cenedlaethau cynharach yn eu cael yn yr isrywogaethau hyn, ac o'r rhodd ryfeddol gan y gorffennol i'r presennol sydd i'w weld mewn hen berllannau.

Ffoto: Pauline Sykes.

Mae gwarchodfa Cors Teifi wedi croesawu ych yr afon i rengoedd ei chynorthwywyr. Fel tractorau caeau reis a darparwyr cig iach a chaws mosarela, mae'r anifeiliaid hyn wedi dod â budd mawr i'n rhywogaeth ni. Draw ar y gors, maent yn darparu gwasanaeth arall, wrth glirio'r gorsen a gwella'r amgylchedd.

Bydd byd natur yn aml yn cael ei wthio i warchodfeydd bychain, ond mewn mannau lle mae llecynnau helaeth o gynefin heb ei wella yn aros, megis ar yr ucheldiroedd o gwmpas Cwm Elan, mae'r gwrychoedd yn llawn o gnau ac aeron, ac mae'r coedwigoedd a'r caeau'n llawn o ffyngau. Mae madarch gwylltion, rhai ohonynt gyda blas llawer gwell nag eiddo'r sfferau gwynion y mae archfarchnadoedd yn eu gwerthu, yn denu ymwelwyr ac yn cynnal yr economi lleol.

Y mae'n 'dymor agored' ar yr archfarchnadoedd. Mae llyfrau megis *Shopped: The Shocking Power of British Supermarkets* gan Joanna Blythman, a *Not on the Label – What Really Goes into the Food on Your Plate* gan Felicity Lawrence, wedi bod yn gwerthu fel slecs. Yr wyf wedi gwrthsefyll y demtasiwn i adolygu'r rhain, gan eu bod yn ymdrin â llygru'r gadwyn fwyd fel y mae hwnnw'n effeithio ar brynwyr, yn hytrach nag ymdrin â'r amgylchedd. Eto, mae hyn wedi fy ngadael gydag un llyfr i'w adolygu sy'n nodi'r holl gysylltiadau rhwng yr hyn yr ydym yn ei fwyta, sut y mae ein bwyd yn cael ei gynhyrchu, a beth y mae hyn yn ei wneud i'r amgylchedd byw.

Mae *So Shall We Reap* yn ddadansoddiad grymus o sut y mae'r diwydiant bwyd wedi mynd ar gyfeiliorn. Er bod yr hanes yn un trist, mae egin gwyrddion i'w gweld. Er nad yw'n addas iawn ar gyfer ffermio 'nwydd', lle mae'n rhaid cynhyrchu bwyd am y gost isaf bosibl ar gyfer y farchnad fyd-eang, mae gan Gymru asedau enfawr ar gyfer ffermio amgylcheddol, er enghraifft gwartheg duon Cymreig sydd wedi ymaddasu'n dda â'r amgylchedd hwnnw.

Mae adferiad dolydd brwyn a rhostiroedd, trawsnewidiad planhigfeydd yn goedwigoedd naturiol, a'r hyfrydwch o weld gweilch y pysgod yng nghefn gwlad Cymru, i gyd yn achos gobaith. Mae gan Gymru gymaint o fendithion naturiol fel ei bod yn anodd peidio â bod yn optimist, hyd yn oed yn wyneb problemau her amgylcheddol.

James Robertson

Editorial

Nothing connects us to nature more firmly, or reminds us of our animal biology more clearly, than food. Strip away the alienating influences of agri-business, food processing and retailing, and it becomes clear that a concern for the food we eat and for the health of the natural world should go together.

There is plenty in this edition to illustrate the happy union of food and nature. The story of our old Welsh apple varieties is a reminder of virtues which earlier generations found in these varieties, and the wonderful gift from the past to the present which old orchards represent.

The Teifi Marshes reserve has welcomed the water buffalo to its ranks of helpers. As paddy field tractors and the providers of healthy meat and mozzarella cheese, these animals have brought huge benefits to our species. Down on the marshes, they are providing another service, clearing common reed and improving the environment.

Nature is often pushed into small reserves, but where extensive areas of 'unimproved' habitat remain, such as the uplands around the Elan valley, the hedges are filled with nuts and berries, and woods and fields are full of fungi. Wild mushrooms, some an infinitely finer flavour than the white spheres which supermarkets sell, attract visitors and support the local economy.

It is 'open season' on the supermarkets. Books such as Joanna Blythman's *Shopped: The Shocking Power of British Supermarkets*, and Felicity Lawrence's *Not on the Label – What Really Goes into the Food on Your Plate*, have been selling like hot cakes. I have resisted the temptation to review these, as they deal with the corruption of the food chain as it affects consumers, rather than the environment. That has still left me with one book to review which does make all the connections between what we eat, how our food is produced and what this does to the living environment.

So Shall We Reap is a powerful analysis of where the food industry has gone wrong. Although it makes gloomy reading, green shoots are detectable. Poorly suited to 'commodity' farming, where food has to be produced at the lowest possible cost for the global market, Wales has huge assets when it comes to environmental farming, such as hardy, well-adapted Welsh Black cattle.

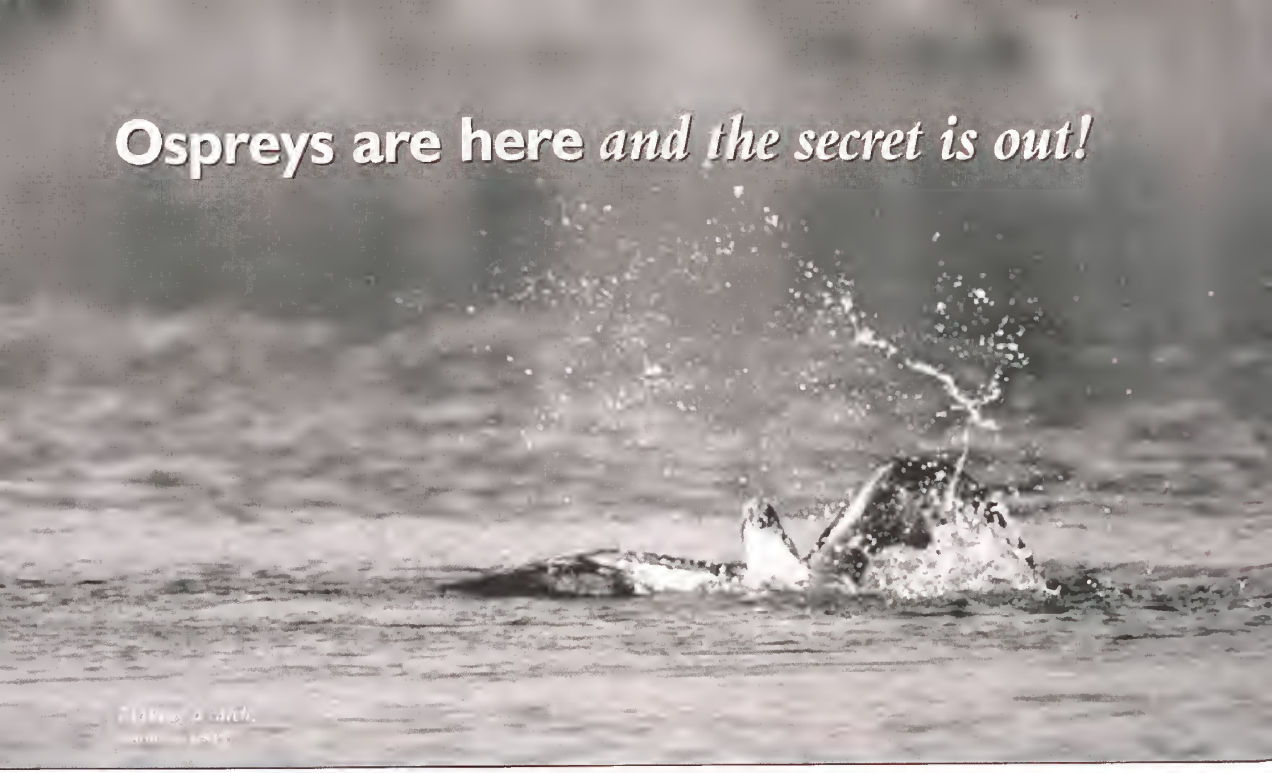
The restoration of rush meadows and heaths, the conversion of plantations to natural woods and the delight of seeing ospreys in the Welsh countryside are all causes for hope. Wales is so naturally blessed that, despite the environmental challenges we face, it is hard not to be an optimist.

James Robertson

Photo: Daniel Butler.

The delectable cauliflower fungus.

Ospreys are here *and the secret is out!*



With its large size and superlative fishing skills, the osprey would be an impressive addition to any country's avifauna. It is receiving a warm welcome in Wales, as the watchful efforts of local people in the Glaslyn valley have demonstrated. ***Patrick Lindley*** *and* ***Carl Nicholson*** *tell the bitter-sweet tale.*

It is mid May, 9.30am, the PC is on and I am starting to work my way through my emails, a cup of Earl Grey close by, a normal day in the office. As the clock moves towards lunchtime I am handed a note with the message, 'an osprey nest has been found in north Wales'. No location is revealed, only a telephone number. I look at the note in total bewilderment but with a sense of awe. Questions flood in. Can this be true? Who found it? Where is it? I begin to comprehend the enormity of the note – if true, this would be the first time in recorded history that a pair of ospreys has bred in Wales. A normal day!!! Is there such a concept within conservation and ecology?

Just passing through

Spring and autumn are always glorious and challenging times for 'birders'. These seasons are characterised by the ebb and flow of birds either moving to breeding grounds or returning to winter quarters. The osprey, like many other passage migrants, navigates its way from West Africa to northern latitudes, arriving in the UK in April.

There is no evidence to suggest that ospreys have ever bred in Wales. Extensive trawls through the annals of Welsh ornithological literature fail to provide a convincing case to suggest otherwise. There are no Welsh place names referring to Gwalch y Pysgod (fish hawk) to infer ospreys have bred in the principality. In Scotland several Gaelic place names of 'Isgair' or 'Isagair' (the fisherman) suggest ospreys may have bred at these locales long ago. In Wales, records from the 19th century suggest ospreys were regularly observed on passage, but the species

appears to have suffered merciless persecution, with many references to birds being shot or pole trapped[1]. During the late 1800s the breeding population in Scotland came close to extinction due to intensive persecution, and so presumably birds were seen less frequently on passage in Wales.

The number of ospreys recorded in spring has increased since the 1980s, probably in synchrony with the growing Scottish population. Favoured passage sites include the coastal estuaries, and the large inland lakes such as Talybont Reservoir, Llyn Brianne and Llyn Brenig. Regular sightings spurred the Forestry Commission to erect purpose-built nesting platforms in suitable locations within Wales. Their aim was to encourage passage birds to breed; they might then form the basis of a viable Welsh population. In Scotland and other parts of their range, ospreys readily build their nests on these artificial platforms, and when a new breeding pair establishes a territory this may act as a nucleus for further pairs. Until 2003, no site in Wales, with or without a nest platform, had attracted a breeding pair.

Ospreys in Porthmadog

In recent years single ospreys have been regularly observed in the Porthmadog area, mostly during spring passage, but no birds were considered to have nested. In late April 2004, a small group of bird-watchers was revelling in the sight of a male osprey fishing – what an amazing display of skill and a privilege to watch! On catching a fish in the shallow waters of the Cob, these lucky birders watched the male shake the water from his wings and head up the Glaslyn valley. They pondered this and realised that the male could have a mate to whom he was taking the fish. In 2003, other birdwatchers had witnessed similar events in the same locality. So began a hasty search of the Glaslyn, which resulted in a large nest being found on 17 May, with the head of the incubating female clearly visible over the nest rim. Her markings around the crown and nape were very distinctive and proved to be useful in identifying which sex was incubating.

This event, much to the astonishment of many ornithologists who had wished for this for many a year, represented the first confirmed osprey breeding attempt in Wales.

A favourit perch.
Photo: © RSPB.

Operation Pandora

The nest site was vulnerable to both egg collectors and disturbance. Though the probability of egg theft in 2004 was considered low (amendments to the Wildlife and Countryside Act permitting custodial sentences have significantly reduced the number of egg-collecting incidents), there was no room for complacency. The osprey, a large bird of prey with a wingspan of up to 2m (6 feet), is one of the world's most spectacular and popular raptors. The question on everyone's lips was obvious. How are we going to keep the news secret?

From the moment the nest was located we put into operation a 24-hour nest protection scheme. This involved local volunteers, staff from the RSPB, North Wales Police, Countryside Council for Wales (CCW) and Snowdonia National Park Authority (SNPA).

Secrecy was paramount. There were countless stories of local volunteers confiding in no one, not even those closest to them. One is left wondering what their loved ones and friends thought they were doing as they tried to disguise sudden disappearances between the hours of dusk and dawn! The osprey project was launched and

The male osprey at the nest.
Photo: © RSPB.

assigned the codename of Operation Pandora, and all hoped that it would not suffer the same unmanageable problems from the many ills released from Pandora's box in Greek mythology! When local landowners were told of the bird's presence, they quickly embraced the news, and we thank them all.

The male was seen to be colour-ringed (an orange Darvic ring with black inscription) and was identified as a bird hatched in Speyside, Scotland in 1998 and translocated to Rutland Water to be released as part of their reintroduction project. This is the first time this bird has been positively identified since 1998, posing the question of where he has been for six years. The female is unringed and is probably a bird hatched in Scotland.

Events unfolded slowly. The birds were clearly catching sufficient fish and this boded well for the time when chicks would need feeding. The fishermen among the band of volunteers looked on with envy as the male delivered up to 4lb rainbow and brown trout to the female, but with sympathy as distasteful grey mullet, which formed the bulk of the diet, were caught.

On 16 June we heard the long-awaited news that there were signs that the eggs had hatched. All celebrated, and with the female appearing to feed in two directions, it was quickly assumed that there were two chicks.

A Greek tragedy

Was Pandora a cruel link to the box of mischief? During mid-June the weather deteriorated with heavy squalls of rain and wind continually arriving from the south-west. On 1st July, bad news broke; under the weight of 80mm (3.1 inches) of rain the nest had partially collapsed. All was not well, with both adults behaving strangely. A visit to the nest site retrieved two dead osprey chicks off the ground from under the nest. This was a cruel blow to all who had put much time, energy and effort into the nest protection scheme. To put this into context, up to 95 people (predominately local volunteers and 30 staff members from the RSPB, CCW and the SNPA) contributed over 2,000 hours towards the scheme. An incredible effort and and our thanks go to everyone who helped.

Public viewing point

Once the eggs had hatched, the threat of egg theft was lifted and the birds were actively feeding chicks. Now was the time to share this historic occasion, and provide a facility where people could see for themselves this magnificent bird, admired by fishermen around the world. It is reported that tribesmen from the beaches of Senegal chant of the bird's hunting skills as they brave the Atlantic surf to tend their nets[2]. Fishermen everywhere wax lyrical about the athleticism of ospreys. Whatever the magic is – the undulating male display flight, the hunting plunge into water or their calm demeanour – people admire and become fascinated by them. After consultation with local landowners and a raft of agencies and organisations, the RSPB arranged a public viewpoint adjacent to Pont Croesor, which spans the river Glaslyn between Prenteg and Llanfrothen.

The public viewing point. *Photo: © Gili Armson.*

With a field car park, toilets and a fenced off area hastily arranged, and the provision of high powered telescopes, RSPB staff prepared to welcome visitors and give them the opportunity to watch these birds. Local villagers showed a keen interest in watching the ospreys. It soon became a regular meeting place, and developed into one of the largest social gatherings the valley had seen. Ironically, the nest failed on the day the public viewing point was launched. However, over an eight week period over 8,000 visits have been registered there.

Despite the unfortunate loss of the chicks, the pair remained faithful to the nesting site, which is common behaviour in ospreys whose breeding efforts have failed. The pair continued to roost on favoured perches and return daily with fish. They also demonstrated fidelity to the site with regular bouts of frustration activity (new nests are often built when a pair fails – these are termed frustration nests), as they repaired the damaged nest. Sticks, twigs and grass were added on most days. The nest is now appreciably larger and hopefully strong enough to survive the winter gales.

Flights by the birds over the viewpoint were always a highlight especially when returning from the estuary with a fish, or when early morning mists forced them to fly lower than usual. If the male returned with a large mullet, it was not unusual for him to eat the head and hand over the fish for the female to eat. There were often long periods of resting to digest their meal and if this took place out of view, it was a case of playing a game of patience until the birds reappeared. This certainly would not have been the case if there had been hungry young chicks to feed.

These periods of anticipation gave visitors time to appreciate what a wonderful setting the birds had chosen. Rocky outcrops emerge from the valley floor and hills rise to each side of the lush green valley, through which the river Glaslyn flows, with its families of red-breasted mergansers and mute swans and the occasional iridescent blue flash of the kingfisher flying up-river to one of his favourite perches. Peregrines often performed aerial combat with other birds of prey near lofty crags and from the wooded slopes floated buzzard and the occasional red kite.

As migration time came closer, the birds appeared restless and nest building became more frantic as they made final additions. The female spent longer periods away from the nesting site, disappearing for eight days in August, leading us to believe she had started the long, arduous journey to winter quarters. Soon both birds will depart for warmer climes. During the autumnal months, we are considering plans to strengthen the nest, if given landowner and CCW consent.

This has been an amazing year for ospreys in Wales. A second pair of breeding ospreys, whose location has been kept secret, has successfully fledged one chick. This is the first time breeding has been recorded in Wales and is a landmark in Welsh ornithology. Colour rings on the birds' legs confirm that this male was also translocated from Scotland to Rutland Water as part of the Rutland Osprey Project, and the ringed female is also from Scotland.

Views from the viewing point

The comments in the guest book told us of the pleasure visitors had experienced. One visitor wrote: "I visit the bridge regularly but since the viewing point has been set up I have seen more varieties of birds and learned so much more about the birds of our valley." A thirteen-year-old girl wrote: "Fantastic view, absolutely amazing, really made my day".

"Diolch, da iawn, diddorol iawn, gwych", appeared regularly. Undoubtedly the local communities of the Glaslyn Valley will look forward to seeing the birds returning in the springtime and we will say, "Welcome home to Wales".

Patrick Lindley is Uplands and Species Officer and **Carl Nicholson** is Senior 'Showing people birds' Officer for RSPB Cymru.

References

1 Lovegrove, R., Williams, G. & Williams, I., 1994. *Birds in Wales.* T & AD Poyser

2 Poole, A.F., 1989. *Ospreys: A natural and unnatural history.*

Carl Nicholson at the viewing point. *Photo: © Gili Armson.*

Wing-stretching
Photo: © RSPB.

Gweilch y pysgod

Mae gweilch y pysgod i'w gweld yn bur aml yng Nghymru, os ydych yn gwybod ymhle i chwilio: maen nhw'n pasio trwy'r wlad yn ystod y gwanwyn ar eu ffordd i'w safleoedd bridio yn Yr Alban, gan ddychwelyd unwaith eto i orllewin Affrica yn ystod yr hydref. Bu eleni yn fuddugoliaeth ac yn drasiedi pan gofnodwyd am y tro cyntaf fod gweilch y pysgod yn bridio yng Nghymru. Fe welodd gwylwyr adar yn ardal Porthmadog walch y pysgod gwrywaidd yn mynd â physgod i fyny dyffryn Glaslyn, gan ddod i'r casgliad fod ganddo gymar. Daethpwyd o hyd i'r nyth, ac ymhen amser fe ddeorodd dau o gywion. Yn anffodus, er iddyn nhw gael gofal bedair awr ar hugain y dydd gan drigolion lleol, yr RSPB, y Cyngor Cefn Gwlad ac Awdurdod Parc Cenedlaethol Eryri, fe lwyddodd storm fawr yn ystod mis Mehefin i ddinistrio'r nyth, a bu farw'r ddau gyw. Fodd bynnag, fe lwyddodd y ddau walch y pysgod i fagu un cyw mewn lleoliad dirgel yng Nghymru, felly gobeithio'n wir y byddwn yn gweld mwy o weilch y pysgod yn y dyfodol.

Teifi Marshes Nature Reserve – *where the buffalo roam*

Photo: Lin Gander.

The Wildlife Trust of South and West Wales has long been involved with the Teifi Marshes in Pembrokeshire. Now some unconventional grazers have been enlisted to control reeds and get the management right. ***Richard Dodd*** *introduces us to a beast with a long history of domestication, the water buffalo, and takes a look at the many different habitats that make up this intriguing site.*

The award-winning Visitor Centre.
Photo: Lin Gander.

It takes about 15 hours for heavy rain at the source of the river Teifi to reach the sea at Cardigan. It is a leisurely, walking-pace river and very picturesque in the summer but winter rains swiftly transform it into a fast flowing torrent, bringing down thousands of tons of silt to the estuary. With the river Tywi, it shares joint status as the longest river wholly in Wales – both are 65 miles long. The source lies deep in red kite country, in the hills north of Tregaron, and it is one of the great salmon and sea trout rivers, and home to many otters. The coracle men still fish using these ancient craft.

Down in the lowlands is the area known as the Teifi Marshes, fed by the Teifi and its tributaries. In 1992 the purchase of part of this, the old Cardigan Wildlife Park, enabled what is now the South and West Wales Wildlife Trust (WTSWW) to build an award-winning Visitor Centre, officially opened at Easter 1994. The following year, we acquired the eastern part of Pentwd and Rosehill marshes, bringing the whole area, some 107 hectares (265 acres), under our management.

The bulk of the reserve, consisting of marsh, meadows and woodland, lies within the Teifi Estuary Woodlands and Marshes SSSI. Notified principally because of its botanical interest, this SSSI includes woodland on the Ceredigion bank of the Teifi (Coedmor Woodland National Nature Reserve) and extends several miles upstream, almost to Llechryd. This area is a central component of a Special Area for Conservation (SAC) covering the lower Teifi valley.

Conservationists with a long history – water buffalo

One of our most exciting innovations at the reserve is using water buffalo *Bubalis bubalis* as a conservation management tool to graze the marsh and reedbeds in areas where domestic cattle are not suited.

The view across the marshes to Cardigan.
Photo: Lin Gander.

These animals originate from Asia and arrived in India and North Africa around 600AD. The returning Crusaders in the Middle Ages introduced them to Europe and herds still exist in Italy and Bulgaria. They are sometimes referred to as Mediterranean water buffalo, but around 95% of the world's population remains in Asia. They provide more than 5% of the world's milk and buffalo butterfat is the major source of cooking oil (ghee) in some Asian countries. They are also used as tractor animals and in some places for recreation, being used in racing festivals! Their sturdy body structure, with the even distribution of body weight over the feet and legs, is an important factor which helps when grazing, and the large, boxy hooves allow ease of movement in the soft mud of rice fields – or Welsh marshes!

Many farmers in the UK have diversified with the help of water buffalo, which are prized for their low-cholesterol meat and as providers of the distinctive mozzarella cheese. They are intelligent animals. Young ones learn quickly but are often reluctant to change their habits. When calves are born, females will probably stay with the mother for many years – sometimes for life – while males will stay until about the age of two, when they will be driven from the group by an adult bull. A newborn calf weighs between 35 and 40kg, but a fully grown adult can weigh as much as 800kg. They can live to 20 years and a cow can give birth up to 10 times in her lifetime.

At the Welsh Wildlife Centre they keep areas clear of invasive plants such as willow scrub and reedmace, and so are helping us to maintain the habitats favoured by many native and migratory wading birds. They like nothing better than wallowing, thus creating depressions and ponds which are a perfect habitat for dragonflies and birdlife.

Habitats and species associated with the Reserve

Alder Carr

Carr is fen woodland and may be dominated by willow or alder. This area is unusual, possibly unique, because alder trees are growing in saline conditions with a twice daily inundation by the tides. There is no public access and the best views of it are from the viewing gallery of the Cetti's Restaurant or from the Creek Hide.

At present it is a cause for concern, as in recent years the trees have succumbed to the fungus infection *Phytophthora* that is killing alders all over Britain. The disease was first noticed in Britain in 1993 and natural regeneration appears limited. Although there is no cure at present, coppicing has demonstrated vigorous re-growth. Management is underway, the target of which is to coppice and pollard approximately one third of the trees in the 2.6 hectare woodland. This work is being undertaken over a period of two to three years and the results will be closely monitored by both the WTSWW and the Environment Agency to assess the effectiveness of this strategy.

Bass Lagoon

This pool in front of the Kingfisher Hide is named after Bass, the brewers, who sponsored its creation. A lagoon is a shallow pool filled periodically from a nearby larger body of water. This lagoon is filled from two sources: the River Teifi overflows a sluice from the Rosehill Marsh when tides are above 16ft, and a small branch of the River Piliau flows in from the freshwater Pentwd Marsh when water levels there are high. The water is therefore brackish. In summer and autumn the tidal feed dominates and the salinity increases but in winter and spring the freshwater flow is more important. The lagoon is 6-8ft deep in places, full of eels, and a popular eating-place for heron, otter and kingfisher.

Teifi Marshes. Photo: Sid Howells.

Centre Meadows

These are unimproved grassland with a low fertility that permits the growth of wild flowers. When grassland is improved, by muck-spreading, fertilizer or simply leaving grass cuttings on the surface, the grass rapidly outgrows the flowers, smothering them, and they die out. These meadows are full of flowers and on fine summer days crowded with butterflies, hoverflies, bees and many other insects. The grass will be cut in late summer, after the wild flowers have seeded.

Gorge Woods

The river gorge is very steep sided, making timber extraction difficult. This has resulted in much of this woodland remaining untouched for many decades, some of it probably since the slate quarrying stopped towards the end of the 19th Century. The five abandoned quarries are rich in lichens – one surveyor rated the sites in the top ten in Britain for lichens. The topography of the gorge with the river flowing through it is such that the tree-lined sides of the gorge slow the flow of moisture-rich air and create very humid microclimates – ideal for mosses and lichens.

On the Gorge Trail there are small-leaved lime, wild service and wych elm trees, some exceptionally large examples of wood millet, an attractive woodland grass, and spectacular views of the river.

Photo: Lin Gander.

Overlooking the Teifi marshes, the giant otter forms part of a sundial.

Pentwd Marsh

This is a major area of freshwater grazing marsh. In recent years excessive tidal incursion from the River Teifi via the River Piliau outflow has changed this habitat. Too wet to graze, the common reed, *Phragmites australis*, has spread unchecked. Enter our water buffalo! We introduced these onto the marsh in 2000, to graze the reed and rush and open up areas of standing water. They also draw in other herds, mostly in the form of tourists!

Handsome but unwelcome reed mace, *Typha latifolia*, has invaded from the west side. The reed mace (commonly but improperly known as bulrush) grows best on nitrogen-rich soils, so here it is an indicator of unwanted enrichment or eutrophication, due to run-off from adjacent land. Enrichment encourages growth of robust plants to the detriment of smaller, finer herbs. If we restore the tidal controls at the Piliau outflow, we should be able to reverse some of the decline.

Nuthatch. Photo: Michael Hammett.

Railway track

The entrance road and its continuation across the marsh as the Otter Trail is the old 'Cardi Bach' railway line. Part of the Whitland to Cardigan railway, the embankment built to cross the Pentwd/Rosehill Marsh was instrumental in the creation of the discrete freshwater and saltwater marshes. Its construction involved building a 'cess' – a free-draining, rocky base – using waste clinker from the blast furnaces in south Wales. Some limestone ballast was also used, so this area, like the slate waste, is slightly base-rich and has plants not usually found on the predominantly acidic soils of this part of Wales. One of the properties of a cess is that it will function as a heat-sink, warming up on sunny days and holding its heat. Flowers bloom early here, and trains bringing in seeds from other places have increased the diversity of the flora along the track.

Rhiwlas woods

Ecologically less exciting than the gorge woods with which they are contiguous, this woodland strip nevertheless has some interesting features. There are many very old trees, particularly towards the Forest Farm end, but there is also evidence of past management. Patches of coppiced oaks are evidence of felling about 90 years ago: the layout of groves of coppiced hazel suggest that they were planted. Now, the wood has a high closed canopy, reducing the light intensity so that there is a poor summertime ground flora, a sparse shrub layer and little tree regeneration.

In spring however, before the trees are fully in leaf, this woodland is a mass of bluebells, campions, wood anemones, celandines, primroses and stitchworts. It is a good place to see nuthatch and pied flycatcher, which nest in the bird boxes. Two small herds of deer, one of red deer, one of sika deer, also roam these woods, using the meadows alongside the entrance road in early morning or evening.

Slate waste

This is an industrial spoil heap, covering eight acres to a depth of 15-20ft with a mixture of mudstone and slate waste from the quarries in the river gorge. Since quarrying stopped, over 100 years ago, erosion and accumulation of wind-blown dust and organic matter has provided a thin soil. This local slate is slightly alkaline, so the soil is base-rich and supports the growth of lime-liking plants such as English stonecrop, orpine, carline thistle, clematis and rusty-back fern.

In addition, the mixture of bare slates for basking and scrub for cover provides excellent habitat for invertebrates, snakes and lizards. There is a current management project underway here to reduce the

Photo: CCW.

Rusty-back fern.

amount of scrub cover and maximise the amount of slate/scrub interface. As well as improving the habitat for invertebrates and reptiles, this will provide habitat for early pioneer plant species, which quickly become shaded out by scrub encroachment.

A place for all seasons

How do you sum up all this diversity? Teifi Marshes is a place for all seasons: regeneration and renewal in spring, richness and ripening in summer, mellowness and transition in autumn and finally the sheltering haven of winter.

Richard Dodd is Heritage Lottery Fund Project Manager with WTSWW and Reserve Manager at Teifi Marshes.

The Welsh Wildlife Centre, Cilgerran
Cardigan SA43 2TB Tel. 01239 621600

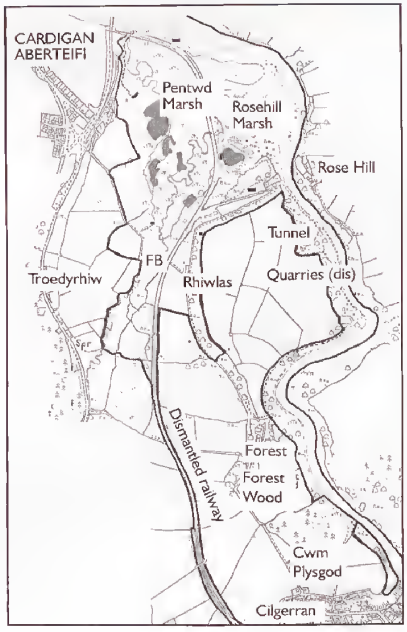
The Welsh Wildlife Centre is located just outside the town of Cardigan and is the ideal base to view the rare Cetti's warbler, kingfisher, marsh harrier, red kite, and buzzard. A series of nature trails guide visitors through the natural habitats of otters, badgers, water voles, and other mammals. The visitor centre and restaurant have wheelchair access and a lift to all floors.

Getting there: From Cardigan, take the A478 south towards Narberth and Tenby. After 1.5 miles, turn left into the village of Cilgerran, from where the Welsh Wildlife Centre is signposted.

Opening hours: April to October, 10.30am until 5.00pm. Admission free – parking £3. The reserve is open all year round, and the visitor centre can be opened to coach parties and groups during the winter months by prior arrangement.

Lle mae'r byffalo'n byw

Mae byffalo dŵr yn helpu i gadw trefn ar Warchodfa Natur Corsydd Teifi yn Sir Benfro, sy'n cynnwys amrywiaeth o gynefinoedd. Mae'n cymryd 15 awr i law lifo o darddiad afon Teifi yng ngwlad y barcud tros 65 milltir i lawr i'r gwastatir a Chorsydd Teifi, sydd bellach dan reolaeth Ymddiriedolaeth Natur De a Gorllewin Cymru ac sy'n rhan o Safle o Ddiddordeb Gwyddonol Arbennig ac yn gartref i Ganolfan Bywyd Gwyllt Cymru. Yn ogystal â chynhyrchu llaeth i wneud caws mozzarella, mae'r byffalo dŵr, a ddaeth gyda'r Croesgadwyr o Asia, hefyd yn addas i bori ar diroedd gwlyb. Yn y Ganolfan, maen nhw'n cael eu defnyddio'n offeryn cadwraeth i bori a rheoli planhigion ymwthiol, fel brwyn ar Gors Pentwd, un o nifer o gynefinoedd: Coedydd gwern sy'n hynod am dyfu mewn dŵr hallt, ond sy'n dioddef o afiechyd. Lagŵn sy'n lle bwydo i grëyr, dyfrgwn a glas y dorlan. Dolydd blodeuog sy'n llawn trychfilod. Coedydd ceunant gyda chen prin. Trac rheilffordd yr hen 'Gardi Bach' lle mae sylfaen y lein wedi creu cynefin anarferol. Coedydd Rhiwlas, sy'n gartref i ychydig o geirw. Gwastraff llechi. sy'n denu planhigion tir calch.



Llên y llysiau: *Y prosiect sydd yn cloddio am yr aur o dan y rhedyn*

Ffotos: Duncan Brown

A hoffech wybod mwy am brosiect Llên y Llysiau? Cysylltwch felly â safle we'r Gymdeithas www.cymdeithasedwardllwyd.org cliciwch ar y botwm *Llên y Llysiau* … ac fe welwch safle newydd arbrofol y prosiect gyda chyfle i ychwanegu eich sylwadau ac i gyrchu'r wybodaeth a gasglwyd hyd yma. Rhowch gynnig arni, mae'n hawdd! Neu, os yw'n well gennych, rhowch nodyn ar bapur a'i anfon at **Haf Meredydd, 14 Stryd Wesla, Porthmadog, Gwynedd.**

Llên y Llysiau (the Lore of Plants) is a project initiated by *Cymdeithas Edward Llwyd* to collect information on the cultural connections of plants in Wales. Data is available on the *Cymdeithas Edward Llwyd* interactive website. We welcome any contributions regarding the cultural connections of plants, either directly to the website or by mail to **Haf Meredydd** (see above).

Dyddiadur Robert Bulkeley, Dronwy, 1631-35
Rhan 1: Rhod y Tymhorau

Nid pob dydd y mae dyn yn darganfod dyddiadur sydd yn agos at 400 mlwydd oed. Cafodd ddyddiadur Robert Bulkeley o Ddronwy, ger Llanfechell, Môn 1631-1636 ei gyhoeddi yn 1937 gan Hugh Owen[4]. Mentraf awgrymu ei fod ymhlith yr enghreifftiau cynharaf o groniclau bywyd pob dydd yng Nghymru os nad tu hwnt. Roedd Robert yn perthyn i ddosbarth cymdeithasol uwch na'r cyffredin a dyna mae'n debyg sydd i gyfri am ei lythrennedd, a'i ddefnydd, i raddau helaeth, o'r Saesneg. Gwelodd Owen bwysigrwydd y ddogfen hon fel cofnod o fywyd cymdeithasol y cyfnod, gyda'i chofnodion hynod ddiddorol am, er enghraifft, hanes da byw, meddwdod yr awdur, ei arferion crefyddol, ei droeon trwstan, ei haelioni a'i ben busnes. Ysgrifennodd Robert mewn arddull dalfyredig, syml a gonest.

Rwyf wedi ymatal yma, ar y cyfan, rhag ceisio dehongli'r deunydd cymdeithasegol, gan mai llysiau, a'r diwylliant ynghlwm wrthynt, yw fy nhestun. Canolbwyntiais ar gysylltiadau Robert â phlanhigion. Fy nhestun yn y rhan gyntaf hon yw'r cnydau a dyfai – eu pryd a'u sut. Ond mae yna ddanteithion eraill yn gysylltiedig â llysiau i'n diddori yn y dyddiadur; nid lleiaf o'u plith yw'r cofnodion tywydd dyddiol a fuasai'n gefndir hanfodol i'r cylch amaethyddol yn y rhan yma o Fôn y pryd hynny, fel erioed.

Y Tywydd

Tybed pam yr aeth Robert Bulkeley i'r drafferth o wneud sylw ar y tywydd mewn dwy ran o dair o'i gofnodion dyddiol. Onid yw hynny'n ddigon anghyffredin ymysg ffermwyr heddiw, heb sôn am 1631? Roedd crefydd sefydliadol ei ddydd yn rhan o'i fywyd beunyddiol, a chadwai hanner llygad ar symudiadau astrolegol y sêr hefyd. Mae'n anodd credu

fod anian yr arloeswr yn perthyn i Robert, ond anodd credu hefyd nad oedd cymhelliad lled wyddonol, neu o leiaf ymarferol, i'r gwaith o gofnodi tywydd mewn dyddiadur. Roedd ei gofnodion tywydd yn yr haf yn brinnach na'r rhai yn ystod gweddill y flwyddyn, a bu'n cofnodi'r tywydd yn llai fel yr aeth yr amser yn ei flaen. Ym mis Medi – mis y cynhaeaf – y bu'n fwyaf diwyd yn cofnodi'r tywydd (cymaint ddwywaith â'r cyfartaledd cyffredinol), ac mae hynny'n awgrymu cymhelliad ymarferol.

Roedd Robert, yn ôl ein doethineb heddiw, yn byw yn ystod Yr Oes lâ Fechan, cyfnod o erwinder gaeaf bron heb ei debyg ers cychwyn amaethyddiaeth yn y parthau hyn. Dywed y dyddiadur wrthym fod gaeafau trydydd degawd yr 17eg ganrif ym Môn yn hwy ac yn gynharach na'n rhai ni, yn parhau o fis Tachwedd hyd fis Mawrth, a hefyd, yn wahanol i'r hyn a welwn heddiw, yn cyrraedd eu hanterth ym mis Rhagfyr. Roedd Môn yn wyntog (yn enwedig yn y gwanwyn cynnar), yn lawog (yn enwedig yn yr hydref a'r gaeaf cynnar) ond roedd yr hafau ar y cyfan yn "braf" (os dyna yw ystyr "faire" a'i dalfyriad "*fa:*"). Mae ei gofnod *a brave dry day* yn ein hatgoffa o darddiad ein gair "braf".

Cofnododd ddyddiau o law mawr, megis *raynie, fearefull thunders noctu* ar 4 Medi 1631, a *the greatest floud yet ever I saw* ar 7 Tachwedd 1635. Bu Sulgwyn 1635 yn gyfnod o haul bendigedig (*fayre & dry great drought*), ac ar 16 Rhagfyr1634 cafodd ddiwrnod o farrug ac eira pan orfu iddo ddod â'i wartheg godro dan do: *extreame cold frost & high east wind, ye milke kine housed*. Cofnododd niwl (*mistie* neu *misling*) a chenllysg ymhob tymor. Mewn siop ar 7 Rhagfyr 1632 prynodd restr faith o offer at dreulio'r gaeaf yn gyffyrddus ac yn ddiddan, gan gynnwys dau bâr o fenyg, ffrwythau sych (*resins* a *prunes*), pinau, *candells*, *parchment*, crwyn, 2 lath o ddefnydd *holland* a dwy owns o *gum arrabacke*.

Ymddengys fod y gaeafau yn gyson oer. Cofnododd farrug neu eira amlaf yng ngaeafau 1630-31 a 1634-35, a dyddiau oer iawn yn ystod y gaeafau eraill. Cofnododd wyntoedd o'r dwyrain yn achlysurol rhwng Hydref a Mai, ond yn bennaf ym Mawrth ac Ebrill. Prinnach oedd ei gofnodion am wyntoedd gogleddol, y rhai hynny a gafwyd yn Chwefror a Mawrth yn bennaf.

Tyfu a thrin cnydau

Mynychodd Robert **ffeiriau** yn rheolaidd i werthu ac i brynu dillad, offer, calch, bwndeli o foresg, anifeiliaid a bwyd. Ei ddewis o ffeiriau oedd Aberffraw, Niwbwrch, Llannerchymedd, Biwmares a Chaernarfon (soniodd ddim am Borthaethwy). Cofnododd fwriad hefyd i ymweld â ffair Aber (gwyngregyn). Aeth ei wraig yr holl ffordd i ffair Caer ar berwyl ddigon tila (*I gave Besse 2s ta buy a dripping pan at Chester faire*). Sut yr aeth hi yno tybed? Croesodd Robert yn fynych i'r tir mawr ar fferi Abermenai i ymweld â ffair Caernarfon. Un tro, ar ôl peth llymeitian, bu'n rhaid treulio'r nos ym môn rhyw glawdd ar lan anghywir y Fenai, yng nghwmni'r malwod!

I set with HP to Carnvon … we dranke so well that we lost the boat, & had but a lodging with the snaile, our horses were almost starved at Abermenay

Bu Robert yn **aredig** o fis Medi hyd fis Ebrill ond ym mis Rhagfyr y gwnai'r gwaith mwyaf. Yn amlach na pheidio, cyflogodd rhywun i wneud hyn. Ychen, nid ceffylau, a ddefnyddiai ar gyfer y llafur (ee. *I went to llanvoorog intending to buy a yake of yaung axen*). Ar 15 Rhagfyr 1634 bu'n ceisio aredig daear a oedd wedi ei rhewi'n gorn (*plaughing extreame cold frosty east wind*)!

Dwywaith, ym mis Chwefror, y soniodd am **wrteithio** (*I paid wm prich 12d for dunging*). Dechreuodd **lyfnu**'r tir ym mis Mawrth ac Ebrill, weithiau yn hwyrach. Cofnododd: *I began ta Harrow fetches & oates* (3 Mai 1632). Ai **ffacbys y tir âr** *Viccia villasa* (*fodder vetch*) oedd "fetches"? Soniodd yn aml am brynu neu drwsio og, fel arfer gan Edward Miller, Bottan. Bu farw'r cyfaill hwnnw ym mis Mawrth 1633. Noson yr angladd cofnododd Robert: *made very merry*!

Ym misoedd Mawrth ac Ebrill aeth y gwaith o **hau** rhagddo. Fel arfer, heuodd geirch ym mis Mawrth, a **rhyg** ym mis Ebrill. Ai math o had wedi ei brynu i fewn oedd y rhyg "Demnerkes" yn y cofnod *I sowed a kibin af demnerkes Rie?* Ym mis Ionawr cofnododd: *we put inta the barne ye barly goldiog*, cyfeiriad mae'n debyg at lwyth o haidd chwynllyd, wedi ei gymysgu â blodau melyn yr ŷd *Chrysanthemum segetum* neu felyn Mair yr ŷd! *Calendula arvensis*. Dyma'r unig gyfeiriad

yn y dyddiadur at flodyn gwyllt. Dro arall, aeth i Gaernarfon i brynu hadau i'r ardd: *to Carnvon to buy garden seeds*.

Er mai gorchwyl y gwanwyn oedd hau wrth reswm, bu'n hau ym mis hydref hefyd. Plannodd **wenith**, **cywarch** a haidd yn y tymor hwnnw (ee. *I hired RD to drive the plough for 16s & ground to sow 3 quarts hemp seed or a kibyn of barly*). Gwnaeth hynny ambell waith ar ddydd Sul. Soniai am raffu ŷd, a rhaffau mae'n debyg a wnaed o'r cywarch. Un dehongliad posib o'r cofnod yw iddo werthu'r cywarch i raffwr, neu wraig, a phrynu'r rhaffau yn ôl drachefn yn ôl ei angen: *I paid Jane uch w. pryce for rhaffau 2d*.

Cofnododd y taliadau a wnaed ganddo, a'i dderbyniadau, yn fanwl mewn unedau tra anghyfarwydd i ni heddiw. Y bwsiel, neu'r sached, oedd y brif uned, ond masnachodd mewn *quarts*, *peckes*, *peggets*, a chibynau. Gwenith oedd y cnwd rhataf (cyfartaledd o 43 cheiniog y bwsiel) a haidd a **myncorn** (cymysgiad o wenith a rhyg[3]) oedd y drutaf (65 ceiniog). Roedd haidd yn ddrud mae'n debyg oherwydd ei ddefnydd at fragu, diwydiant y bu llawer o alw amdano os oedd arferion bywyd Robert o Ddronwy yn fesur ohono!

Cyflogodd, ym mis Awst yn bennaf, finteioedd o weithwyr i **bladuro** (ee. *I had 4 a mowing , which makes 19, & all is mowed, Deo gloria… I paid ye mowers 8s*). Yn rhyfeddol cawsom 3 chofnod amdano yn y gwair ym mis Mawrth hefyd, heb awgrym o'r hyn a wnaethai yno ar wahân i ddweud ei fod yn ymwneud hefyd â'i ffacbys a'i **bys** (*in hay fetches & peace*).

Diwedd yr haf, gyda'r geiriau *cowain*, *mowing* a *reaps*, cyfeiriodd at weision neu weithwyr yn torri, casglu a chario gwair a chnydau. Nid yw'r gair "cywain" yn cael ei arfer ym Môn bellach[2]. At y gwaith cyflogodd ferched a fu'n dwyn yr enwau Marget Mayncok, Gwen a Gwenhwyfar. Talodd ychydig geiniogau iddynt. Soniodd am wneud **tas** o wair ym mis Awst (*I made a das of hey at ye old barne*) a thas o geirch ym mis Medi. Cyfeiriodd at osod ei borfa i rywun arall, a sawl gwaith ym mis Ionawr at werth ei gaeau **sofl**: *I set* [gosodais] *the pasture in Glas, hey & all to cousin Ednyvet ap Evan, for £4…my stubble is mine*.

Gwaith achlysurol drwy'r flwyddyn oedd **dyrnu** a **nithio**. Digwyddodd o fis Chwefror ymlaen (*yn dyludo ac yn nithio cras geirch cold northen wind*). Gwaith dynion oedd hwn. Bu'n gwerthu neu gyfnewid myncorn yma a thraw drwy'r flwyddyn ond ym misoedd Mehefin a Gorffennaf y ceir y mwyafrif o gofnodion, gan gynnwys: *all day a winowing munke corne, windy*. Gwerthodd a derbyniodd **bilcorn** hefyd hwnt ag yma drwy'r flwyddyn. Hwn oedd y grawn wedi ei lanhau o'r us, eisin neu beiswyn (yn ôl eich ardal[3]). Aeth hwn at y melinydd i'w falu. Yn absenoldeb y melinydd bodlonodd, fe ymddengys, ar wasanaeth ei wraig, ac fe gyfeiriodd at y felinwraig sawl gwaith fel hyn: *I received off ye she miller for pilcorne 29s* !!

Roedd **corsydd** Robert hefyd yn adnodd pwysig. Ym mis Mai talodd chwe cheiniog am agor ceulan mawn: *for opening a moore 6d*. Bu'n torri mawn ei hun ym mis Mehefin: *I made the meares in Gweyn y Car* ac eto ym mis Gorffennaf: *this week is spent in mawn car*. Ym mis Awst rhannodd y fawnog, er mwyn ei osod efallai: *Gweyn y Car was devided*.

Dyna flas ar rod tymhorau Robert Bulkeley, a dyma gau pen y mwdwl am y tro. Rhown iddo fe y gair olaf gyda'i gofnod o 8 Hydref 1635;

… yn gorphen dwyn yr yd i'r ardd, Bendigedig fytho yr Arglwydd Amen.

Cewch weld holl gofnodion Robert Bulkeley sydd yn cyfeirio at rhyg, ceirch, gwenith a haidd ar wefan Llên y Llysiau.

Rhan 2: Byw a Bod. Rhifyn nesaf *Natur Cymru*

Cyfeiriadau

1 Cymdeithas Edward Llwyd (2003) *Cyfres Enwau Creaduriaid a Phlanhigion: 2 Y Planhigion Blodeuol, Conwydd a Rhedyn*

2 Thomas, A.R. (1973) *The Linguistic Geography of Wales: a contribution to Welsh dialectology*, Gwasg Prifysgol Cymru

3 Thomas, R.J. (1966) *Geiriadur Prifysgol Cymru, A Dictionary of the Welsh Language*, Gwasg Prifysgol Cymru, Caerdydd

4 Owen, H. (1937) *The Diary of Bulkeley of Dronwy, Anglesey, 1630-1636* Trans. Ang. Ant. Soc.

Diolch
I Mr & Mrs Ingham, Dronwy am eu cydweithrediad caredig, i Twm Elias am ei gyngor gwybodus ar hanes amaethyddiaeth.

Dehongli a chyfleu iaith y cyfnod
Er mwyn cyfleu naws y gwreiddiol dyfynnais o'r dyddiadur yn helaeth a newidiais cyn lleied â phosib ar y dyfyniadau. Y sillafu newidiais amlaf, anaml y gystrawen. Er enghraifft:
cyfnewidiais *"the greatest floud yt eu I saw" i "the greatest floud yet ever I saw"*

I gyfleu talfyriad defnyddiodd RB atalnodau. Golygai *fa*: "braf" neu "teg", neu "ffair", ac fe'i sillafodd weithiau yn *faire* a dro arall yn *fayre*. Defnyddiodd y Gymraeg i gyfeirio at rai gweithgareddau amaethyddol, a'r Lladin ar gyfer pynciau crefyddol ac amseroedd, ee. *vespi* sef "gyda'r nos", *noctu* sef "yn y nos". Ychwanegais ambell atalnod i geisio amlygu'r ystyr. Ni newidiais yr hen fannod Saesneg ye ond newidiais y person cyntaf "I" bob amser i "I". Rhoddais *with* yn lle'r Lladin *cum*. Newidiais, er enghraifft, 4li. i £4.

17th century Anglesey

Robert Bulkeley of Dronwy, near Llanfechell, Anglesey kept a diary between 1631 and 1636, mostly in English, as was the practice among some sections of literate society at the time, but with much admixture of Welsh and Latin. It is an early chronicle of its type written in a simple, honest and highly abbreviated style reflecting most aspects of his daily life. This account summarises his observations on the weather, his crops and the chores associated with them.

What was his motivation for including a note on the weather in two thirds of his daily records? More weather notes at harvest time suggest an objective, practical purpose, though he was also both God fearing and superstitious. In the 1630s winters seem to have been longer and to have started earlier than those of today and were most severe in December. He records periods of both flooding and drought, and biting winds when the milk cows, "God bless them", were brought indoors.

He and his family attended fairs in towns from nearby Aberffraw to distant Chester, often accompanied by much "merry making"! He ploughed with oxen from autumn to spring, sometimes in frozen ground. Dunging, harrowing, sowing, mowing with scythes, gathering and threshing were all recorded in some detail, as were his crops. These included wheat, barley, rye, hemp, fodder vetch (fetches) and peas (peace). Crops were sown both in autumn and spring. Mungcorn, a form of mixed corn, was highly valued. A product of threshing was pilcorn. Stubble fields were retained while pastures were let. He kept a garden and he cut peat.

Part 2 of this article, in the next issue of *Natur Cymru*, will explore the many other uses Robert Bulkeley of Dronwy had for plants.

From **brown to green** *and back again*

The Trehill fields on the Pembrokeshire coast.
Photo: Matt Sutton.

Extinction is forever, but habitat loss, a familiar term after a century of agricultural intensification, does not have to be the last word. Two suites of meadows, which were once fine examples of the kind of coastal and valley habitats which Wales excelled in, are on their way to recovery. The very different experience gained along the way should benefit other places, as ***Matt Sutton*** *and* ***David Wheeler*** *report.*

Photo: Martin Cavaney.

What does a string of fields perched high on a Pembrokeshire cliff have in common with some wet, imperfectly drained meadows in the middle of a National Nature Reserve? The answer is that these two very different places are both getting special treatment, in a bid to convert them back to what they once were. Those cliff-top fields had been thoroughly 'improved', so bringing back the coastal heath has required drastic action. But for the rushy meadows, recovery has turned out to be the natural course.

Re-wilding a Pembrokeshire headland

The Trehill fields run alongside the Pembrokeshire coast path between Marloes Sands and the Deer Park, part of the National Trust owned Trehill Farm. This stretch of coast has a rich history. Early Iron Age settlers built a fort here, now clothed in bramble and gorse and hanging precariously on the cliff edge. Medieval farmers developed intricate field systems, scratching out narrow cultivated strips from the extensive areas of heathland and rough grazing. Old maps show that these strip-fields survived until around 1800. By the early 1900s though, larger fields growing cereals and potatoes had replaced this patchwork. The old herbs like thyme, kidney vetch and scurvy grass retreated to the steep cliff slopes, and field names like Outer Heath became misnomers.

Now over 200 acres of the farm are being restored once again to a landscape of smaller fields with heathland, herb-rich grasslands and 'bird-friendly' arable crops. The soils have been boosted with fertiliser and lime over the years – fine for crops, but too rich for plants like heather to establish. We scraped off the top 20cm of enriched soil in places, and used it to put back over a mile of hedge-banks. These banks followed old boundary patterns, marked on the first edition OS maps. Lots of

interesting plants came up where we took the soil off, providing an instant link back to the historical flora of these fields. Weasel's snout, sharp-leaved fluellen and corn marigold are some of the attractive 'weeds' which have lain dormant as seeds for many years, waiting for this kind of disturbance to bring them to the surface again.

Moving soil around is an expensive operation though. Elsewhere, we wanted to try 'adjusting' the soil using a more innovative technique.

Liverpool University looked at using sulphur in heathland restoration projects in the 1990s. Sulphur is an acidifying agent – it is broken down by specialised soil bacteria, releasing sulphuric acid which dissolves away the calcium in the soil. Although their experiments were successful, the technique remained largely theoretical as, at upwards of £450 per tonne, the cost of processed sulphur was generally prohibitive in anything other than small-scale trials.

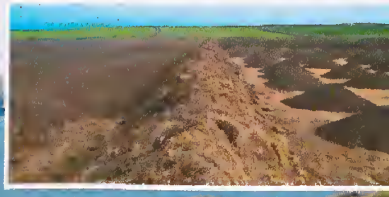
A free source of sulphur

Texaco have invested £84million over the last five years in a state-of-the-art 'sulphur recovery unit' at their Pembroke refinery. This unit processes hundreds of tonnes every month, selling the excess for use in the chemical industry. The company, attracted by the nature of the project, agreed to donate enough sulphur to acidify the Trehill fields. In July 2004, 66 tonnes of liquid sulphur was discharged onto a hard-standing. After it had cooled and solidified, a combination of vibrating roller and JCB broke the brittle yellow solid down into smaller granules. It was then ready for hauling to Trehill Farm and applying with a conventional lime-spreader. Later on this autumn, the acidified area will be seeded with cut heather and other plants, and the rest of the work will be left to nature. And nature is already making good use of the fields. Plenty of choughs – Pembrokeshire's rare red-billed crow – have been feeding on the new hedge-banks and grasslands, while birds of prey like hen harriers and merlins have had big flocks of skylarks and meadow pipits to chase. Coastal plants like thrift are springing up, jostling for position with over a hundred other species in the first summer. Amongst these, least crystalwort – a tiny liverwort not previously seen in the county – has turned up.

Gina and Pete Smithies farm Trehill and their enthusiasm for the project has been crucial. They are reducing the area under arable crops and bringing in beef cattle to graze the project site, keeping the heaths and meadows looking good.

As well as the obvious wildlife gains, the work here has wider benefits. These include the promotion of conservation work within local industry; the positive utilisation of a once polluting by-product; the provision of work for local contractors – machinery hire, fencing, heather harvesting, sulphur haulage and spreading and hedge-banking; and ecological research. The public will soon have free access to the new heathland areas, and this popular stretch of coastal footpath should provide even more of a draw to 'eco-tourists'.

Spreading sulphur counteracts many years of agricultural liming. Photo: Martin Cavaney



Hedgebanks are recreated.
Photo: Matt Sutton.

Restoring rhos pasture at Rhos Llawr Cwrt.
Photo: David Wheeler.

Marsh fritillary butterfly. Photo: Melvin Grey

Lesser butterfly orchid. Photo: CCW

Brown textured rushy meadows

Seen from the air, the purple moor grass and rush pastures at Rhos Llawr Cwrt National Nature Reserve (NNR) are an island of muted browns in a sea of bright nitrogen-green grasslands. These extend throughout the valley drained by the Bwdram and into the surrounding valleys at the headwaters of the Clettwr in mid Ceredigion.

At the turn of the 19th century, these and many other valleys in Wales would have contained large areas of this marshy grassland habitat, known locally as rhos pasture. Home to a profusion of wildlife, such as whorled caraway, greater and lesser butterfly orchids, marsh fritillary butterfly, narrow-bordered bee hawkmoth, snipe and barn owl, it depended on extensive grazing. This was mainly by cattle and horses, but with contributions from every other type of animal kept on the farms.

Although ploughing and drainage have hugely reduced the area of purple moor grass and rush pasture that remains, it is estimated that currently Wales has a total of 24,000 hectares of this habitat. To put this in context, this is nearly half the total remaining in the UK which, in turn, is thought to be considerably more than survives on continental Europe.

Reversion management

Fortunately, through schemes such as Tir Gofal, there are many rhos sites in Wales where opportunities exist to expand the remaining areas of habitat. These are typically sites which were once much larger but which have been reduced in size by draining and re-seeding.

At Rhos Llawr Cwrt we have been investigating options for reverting improved grasslands which were formerly rhos pasture. In addition to large areas of purple moor grass and rush pasture, the NNR includes nine fields with modified grasslands covering an area of approximately 26 hectares. These fields are adjacent to the existing rhos pasture.

One field on the valley side has been singled out for special attention. Along with adjacent fields it had been ploughed, limed, fertilised and re-seeded as a rye grass and clover lay in 1991, but was not comprehensively drained. In 1992 the Countryside Council for Wales acquired the field, and from 1993 onwards it has been lightly grazed by cattle and horses. Soil structure was very similar to the unimproved rhos pasture, but there were chemical differences due to the input of lime and fertiliser.

Photo: David Wheeler.

In 1996 the University of Wales started investigating the effects of three treatments to reverse the chemical changes in the soil bought about by liming and re-seeding. The first of these, annual cutting and removal of vegetation, is usually a very efficient method of removing soil nutrients, but we did not notice a significant difference compared to our control plots. The second treatment involved the application of a herbicide to control the nitrogen-fixing white clover. We observed a dramatic crash in the clover and rye grass population, but believe this reflected changes to soil conditions across the whole field during the first two years of the research period.

We were most intrigued by the third treatment. Aluminium sulphate, a bi-product of the water industry, was applied to study plots. This chemical has the effect of locking up some of the phosphorus from fertiliser, making it unavailable to plants, and increasing soil acidity, potentially reversing the effect of agricultural liming. Once again though, we did not detect discernible differences between the vegetation of the treated area and the control plots. At the end of the research period, the chemistry of the soils treated with aluminium sulphate was very similar to those of the unimproved rhos pasture.

During the research, it became quite clear that there were changes in vegetation going on in the control plots and in the field generally that were quite independent of the treatments. More and more plant species typical of the adjacent rhos pasture were becoming established in the field, and rye grass and clover continued to decline.

Six years is a relatively short period to expect significant vegetation changes due to treatments. This explains why annual cutting and removing appeared to have no effect. It is also reasonable to assume that the changes in soil chemistry brought about by aluminium sulphate will eventually result in even faster colonisation by typical rhos vegetation.

Natural reversion

The inputs of lime and fertiliser on the research field were quite modest, and we hope the change to a rhos type vegetation will occur without too much extra management. It is essential to continue grazing and research elsewhere confirms the benefits of annual mowing and removing vegetation, particularly in relation to rush control. We are also managing the grazing to ensure that the cattle have simultaneous access to areas of rhos vegetation. Seeds of desirable species from the rhos are introduced onto the improved field on the hooves and bodies of the cattle and also through dunging.

Following the research project, we have begun field scale reversion management at Rhos Llawr Cwrt, and 17 hectares of improved grasslands are receiving an annual cut with all vegetation being baled and removed from site. This is mainly achieved with standard tractors, rotary swipes and balers, and this standard agricultural operation of cutting and baling is very efficient. However, some parts of the fields are just too wet: here we use specialist all-terrain machinery, which is slower but can operate in the wet conditions without causing rutting.

The improved fields in the bottom of the valley all have significant drainage systems in place. In the long term we will need to block these drains but, in order to allow standard tractors to operate in reasonably dry surface conditions, we will not undertake this until at least five years of mowing and baling have been completed. We will continue monitoring the research plots, and this may yet indicate further benefits of the research treatments.

Two examples of recovery

Our two projects have many differences, and some similarities. In neither case are we turning back the clock – they both depend on modern techniques and knowledge. The changes which we are lucky enough to witness and help along are very contemporary. They reflect the value that is now put on nature, and the importance of working with natural systems; rhos pasture helps replenish water catchments in summer, for example, and the conversion of ploughed arable land to undisturbed heathland will lock up carbon, and play a small part in counteracting greenhouse gas emissions.

Photo: Matt Sutton.

Weasel's snout lay dormant for many years.

Both projects are about seizing opportunities which present themselves, and working with others, notably farmers, researchers and industry. We are learning many practical techniques in the process. For example, at Rhos Lawr Cwrt we are using a mixed herd of Welsh Black and Highland cattle to graze the rhos pastures and improved grasslands. Unlike modern breeds of cattle, both Welsh Black and Highlands thrive in what farmers might call 'poor quality grazing'. Cattle and ponies are usually reluctant to enter dense rush stands to graze. On the NNR, we have had considerable success in encouraging cattle into these areas by cutting corridors up to two metres wide with clearing saws, from the edge of the stand into the middle. If these corridors are cut in the winter, fresh, palatable growth in the spring attracts the stock, which move into the stands and gradually break them up through trampling and grazing.

At Rhos Llawr Cwrt we aim to revert all of the improved grasslands to rhos pasture, and we have already tested the reintroduction of devil's bit scabious, which is the foodplant of the marsh fritillary butterfly. Clearly there is still much work to do, but the end result will be worth it – the muted brown island in the sea of green will be much bigger. The Trehill fields reversion is in its early days, but again, it promises well and has already won a prestigious biodiversity award. We are hoping that, as wildlife continues to return to this part of Pembrokeshire, the spirit of partnership can go on to bigger, bolder projects

There are few sights more uplifting that a wet meadow awash with marsh fritillary butterflies, or a heath ablaze with purple heathers; few smells more intoxicating than the coconut scent of gorse on a hot summer day or sounds more evocative than the call of the curlew over a marshy meadow, and the chattering of linnets nesting deep in the thick cover of a Pembrokeshire heathland.

Matt Sutton is a Senior Conservation Officer for CCW in Pembrokeshire and **David Wheeler** is Regional Reserves Manager for CCW's West Region.

Adfer dau gynefin

Mae dwy ardal o gynefin prin wrthi'n cael eu hadfer. Yn ôl Matt Sutton a David Wheeler gall ardaloedd eraill elwa o'r profiad. Mae 200 erw o dir fferm Trehill yn Sir Benfro yn cael eu hadfer i greu'r tirlun o gaeau llai eu maint arferai fod yno. Mae'r pridd wedi ei newid ac ychwanegwyd sylffwr i'r tir. Yn yr hydref bydd yr ardal yn cael ei hadu gyda grug a phlanhigion eraill. Mae perchnogion y fferm yn gefnogol iawn i'r fenter. Mae gwaith adfer yn digwydd hefyd yng Ngwarchodfa Natur Rhos Llawr yng Ngheredigion. Arferai'r rhos fod yn gartref i gyfoeth o fywyd gwyllt. I ddechrau, mae'r gwaith adfer yn canolbwyntio ar un cae ar ochr y dyffryn a'r nod yw adfer y rhos i gyd maes o law. Mae'r ddau gynllun yn wahanol iawn ond mae rhai pethau yn gyffredin hefyd. Mae'r ddau gynllun yn golygu gweithio gyda ffermwyr ac ymchwilwyr ac mae technegau ymarferol yn dod i'r amlwg yn y broses. Mae'r cynlluniau hefyd yn adlewyrchu'r gwerth sydd yn cael ei roi ar natur erbyn hyn a phwysigrwydd gweithio i adfer systemau naturiol fel rhosdir. Mae hyn er lles yr amgylchedd yn gyffredinol ac yn helpu lleihau'r effaith tŷ gwydr.

Mountains of mushrooms

Bay Bolete.
Photo: Daniel Butler.

A sweep of upland country lies towards the southern end of the Cambrian mountains. The lonely heart of Wales, which captures rainfall to supply water to Birmingham, is in fact teeming with life. This natural bounty includes mushrooms galore, as ***James Robertson*** *discovered.*

Shaggy Inkcap.
Photo: Daniel Butler.

The path left the lakeside and headed up the hill, over a stile into a woodland of lichen-encrusted sessile oaks and orange-berried rowans. The wood had recently been fenced, and young oak and rowan seedlings were coming up thickly through the carpet of heavily-berried bilberry, a reminder that trees have an older claim to this landscape than sheep. Enormous Dryad's Saddles sprouted from rotting timber, and where the path left the wood and climbed along the edge of a mature larch and spruce plantation, rows of Boletes hugged the fence-line.

I was walking in the Elan Valley, although perhaps the Elenydd is a name that better conveys its mountainous character. This is the lonely heart of Wales, a great expanse of open hill country whose wild, rugged beauty is hard to equal anywhere in Britain. To give an idea of scale, the Elenydd SSSI covers about 23,000 hectares. A wonderful place for walking, as long as you take your waterproofs with you!

The high rainfall is the lifeblood and defining feature of these hills. Blanket bogs hold the water like giant sponges, releasing it gradually though a network of veins into the river arteries which encircle it. The words watershed and catchment, seldom encountered outside geography books, have visible expression here, where water flows to all points of the compass.

To the east, the river Wye captures the waters of the Afon Elan just south of Rhayader, gathering momentum as it canters through the upland catchment between Llangurig and Builth. Streams and tributaries gather to the south in the Afon Irfon, which loops east to join the Wye at Builth. The Afon Tywi just tickles the south west corner of the plateau, but most of the western side of the catchment drains to the Afon Teifi and Afon Ystwyth. Plynlimon, to the north, feeds the Severn.

Elan valley. Photo: Joanna Robertson.

Larch Bolete. Photo: Daniel Butler.

With so much water and so few people living here, it is not surprising that the destiny of the Elenydd has been to provide water for the City of Birmingham. Three huge reservoirs were constructed in the Elan Valley behind three dams, which were opened a century ago this year. A fourth, in the Claerwen valley, completed its half century recently. The engineering feat is astonishing, and the stone and concrete dams and associated buildings are magnificent in a slightly sinister way. What is certain is that, in order to protect the catchment, a vast upland block has remained in one ownership; and this block has avoided the piecemeal attenuation which the pursuit of individual economic interests has visited on even the finest landscapes elsewhere.

You could walk for a day, and never once be out of sight and sound of red kites and buzzards calling. With every footfall goes the chance of discovering some botanical treasure or other. One of my favourites is the ivy-leaved bellflower. Scarce throughout its range, and a truly Welsh national flower, you are as likely to see the delightful upright blue bells of this attractive but elusive flower here as anywhere in the world. Bog orchids hide in peaty flushes surrounded by sundews and white beak-sedge on the blanket bog, and butterfly orchids bloom amidst milkwort and great burnet in the hay meadows. There are also mushrooms and toadstools in greater profusion and variety than you could possibly imagine.

This is Kite Country, where wildlife is a staple of the tourist industry, and hence the economy. For proof of this, call in at the excellent Elan Valley Visitor Centre. I found that everyone staying in the same hotel was interested in wildlife in one way or another. Perhaps unexpectedly, many visitors are attracted by matters mycological, for this is also Mushroom Country.

I will now return to that walk up onto the rooftop of Wales. The line of Boletes that hugged the plantation fence were not just of one species. There were elegant, orange-capped Larch Boletes; larger, brown capped Bay Boletes; shiny, dark brown Slippery Jacks; and tawny Granulated Boletes. All are edible, although none is quite as tasty as the Edible Bolete, the Cep of French cooking or Porcini of Italian, which is always supposed to resemble a penny bun. As no-one knows what a penny bun looks like, or even a penny, come to that, I think buns with sponge undersides describes them well enough.

Ivy-leaved bellflower. Photo: Ray Woods.

Common puffball. Photo: CCW.

Ceps. Photo: Daniel Butler.

Honey waxcap. Photo: Ray Woods.

Finding parasols. Photo: Daniel Butler.

Chanterelle. Photo: CCW.

Dryad's Saddle. Photo: Daniel Butler.

Saffron milkcap. Photo: Daniel Butler.

During my walk I found a host of fungi, large and small, including examples from that most attractive family, the Waxcaps, whose unearthly hues, ranging from reds, oranges, and yellows through to greens and browns, often turning black, make them such a joy to find. Why, I found myself asking, is this area so favoured for fungi?

Part of the answer must lie in the fact that vast tracts of land have been spared the plough and the fertilizer spinner. Nurturing the biodiversity of the Elenydd is now a main aim of its management. This is why your chances of encountering choice fungi are so good. A hunt through hazel and birch scrub, for example, can lead to the discovery of the true chantarelle, a culinary delight with an apricot scent, which even the most timid mushroom-eater can confidently identify.

This fungal profusion has spawned an enterprise which celebrates the mycological paradise of the Elan Valley by offering fungi forays, based at local hotels.

Mynyddoedd ffwng

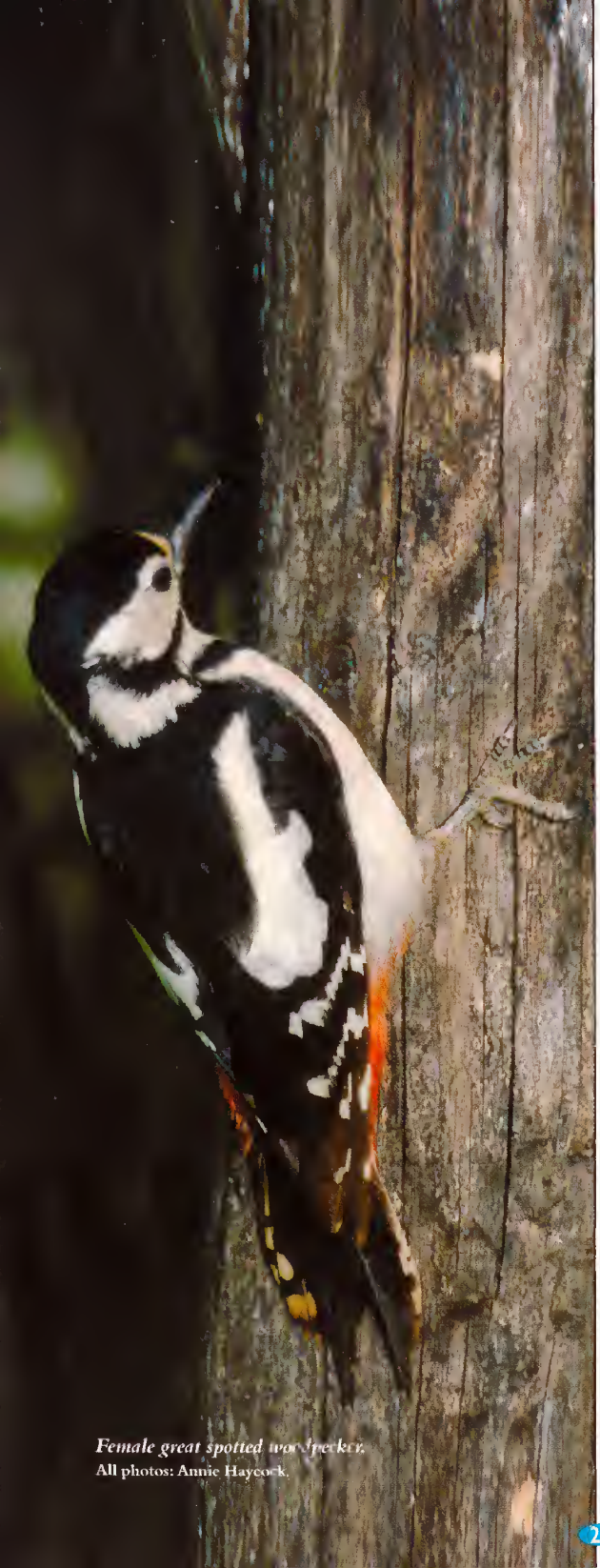
Mae'r Elenydd, y mynydd-dir uchel lle mae cronfeydd Cwm Elan, yn lle gwlyb, ond gwych i gerdded. Yma, lle mae'r glaw'n casglu yn y corsydd, mae dŵr yn llifo i bob cyfeiriad. Am fod erwau lawer yma heb eu haredig na'u gwrteithio, dyma le gwych am ffwng, o rai lliwgar fel y pennau cwyr i rai blasus fel y boled bwytadwy a'r wir siantrel. Bellach, mae gwestai lleol yn trefnu helfeydd ffwng, dan arweiniad ffanatig o'r enw Daniel Butler. Os daw pobl i werthfawrogi ffwng, meddai Daniel, bydd mwy o reswm tros warchod safleoedd lle mae cyfoeth ohonyn nhw.

For two days you can explore beautiful surroundings, discover delicacies like Porcini, Parasols, Blewits, Shaggy Ink-caps, Puffballs and Oyster mushrooms, and then taste your finds. Your guide is the writer and fungi-fanatic Daniel Butler.

As Daniel says, the more people learn to notice and value fungi, the stronger the case will be for retaining our most fungus-rich places, and discouraging operations which destroy them. It also sounds like a lot of fun. So if you have never been to the Elan Valley, or just fancy another excuse to go, why not let the prospect of mountains of mushrooms entice you? Contact Daniel at 01597 811168
danielr.butler@btopenworld.com
www.fungiforays.co.uk

James Robertson edits *Natur Cymru*, and is a writer with a deep interest in the natural world, including the edible bits.

Basket of fungi. Photo: Daniel Butler.



Female great spotted woodpecker.
All photos: Annie Haycock.

Would **woodpeckers** *pose for peanuts?*

Wildlife photographers need to become intimately acquainted with their subjects. In the line of duty, ***Annie Haycock*** *found herself eavesdropping on the private life of a family of great spotted woodpeckers.*

In May 2002, my neighbour Wendy told me she had a pair of great spotted woodpeckers visiting the peanut feeder outside her kitchen window. She invited me to bring my camera along.

The first time I visited her, in early June, the woodpeckers were feeding just a few feet from the kitchen window. But the window wouldn't open more than a few inches so I couldn't take pictures from indoors, and I wasn't in any hurry to take the camera outside in the rain.

A few days later, Wendy was excited at having seen a baby woodpecker being fed by its mother that morning. The 'peckers sometimes flew from the feeder to an old rotting bird table, a rather more natural setting than a peanut feeder against a whitewashed wall. I set the hide up overlooking the bird table, went back indoors, and within five minutes two woodpeckers (Mother and Junior) were sitting on top of it! The rain started again, and I went home.

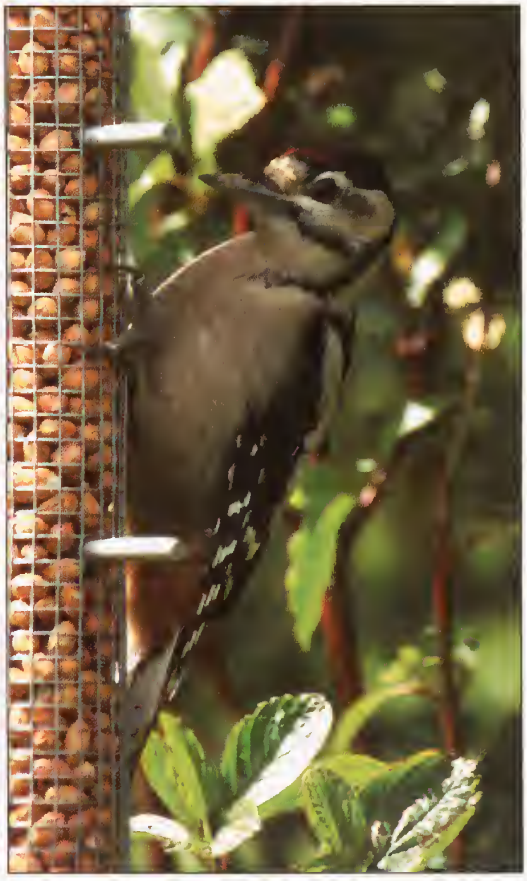
Two days later, I was back again, despite the rain, and sitting inside the hide. The woodpeckers obligingly used the peanut feeder, and occasionally flew to the bird table. Junior perched on the roof from time to time, and slowly slid down to the guttering: I don't know if it was deliberate, or if he just hadn't got the hang of clinging to the slates.

Another two days and the weather was drier, the sky a bit brighter. I sat in the hide facing the old bird table, but all the action was happening at the peanut feeder, with Mum feeding Junior while he sat on the guttering above, or explored the small cherry tree

nearby. On my next visit, I faced the peanut feeder, only to find that Mum was feeding Junior while he sat on the gate behind me!

By now, it was nearly the end of June, and Wendy was ready to move house. This was my last chance to photograph the 'peckers, and I was desperate for some shots against a more natural background. I moved the peanut feeder so it was hanging from the old bird table, and moved the hide to the best position I could find. And sat and waited … and waited … and waited … I even had a little bet with myself that it would be the female who found the feeder first … And waited …

Eventually Junior turned up, landed on the guttering, looked at where the peanut feeder usually was, flew to the trellis, looked again, back to the guttering, up onto the roof, the cherry tree, the guttering again and so on. He was totally at a loss. He flew off, but returned five minutes later and repeated the process. This time he flew to the ash tree behind the bird table, and I heard the following conversation:



Junior gets the hang of the peanut feeder.

"Dad, the peanuts have gone."
"Don't worry son, they'll be filled up again, just wait and see."
"No Dad, I mean they're really gone."
"Well son, I did warn you that all good things come to an end."
"But Dad, I'm hungry."
"Well son, go find your mother, she'll get you something to eat."
And so Junior flew off.

Five minutes later Mum stopped by. She landed on the guttering, looked at where the peanut feeder usually was, flew to the trellis, looked again, back to the guttering, up onto the roof, to the cherry tree – no, can't see much from there, try another branch, and another thinner one, until she was on such a small twig that she couldn't grip and found herself

swinging upside-down in a most undignified manner. At no time did she look anywhere except where the feeder was supposed to be. Was I going to lose my bet?

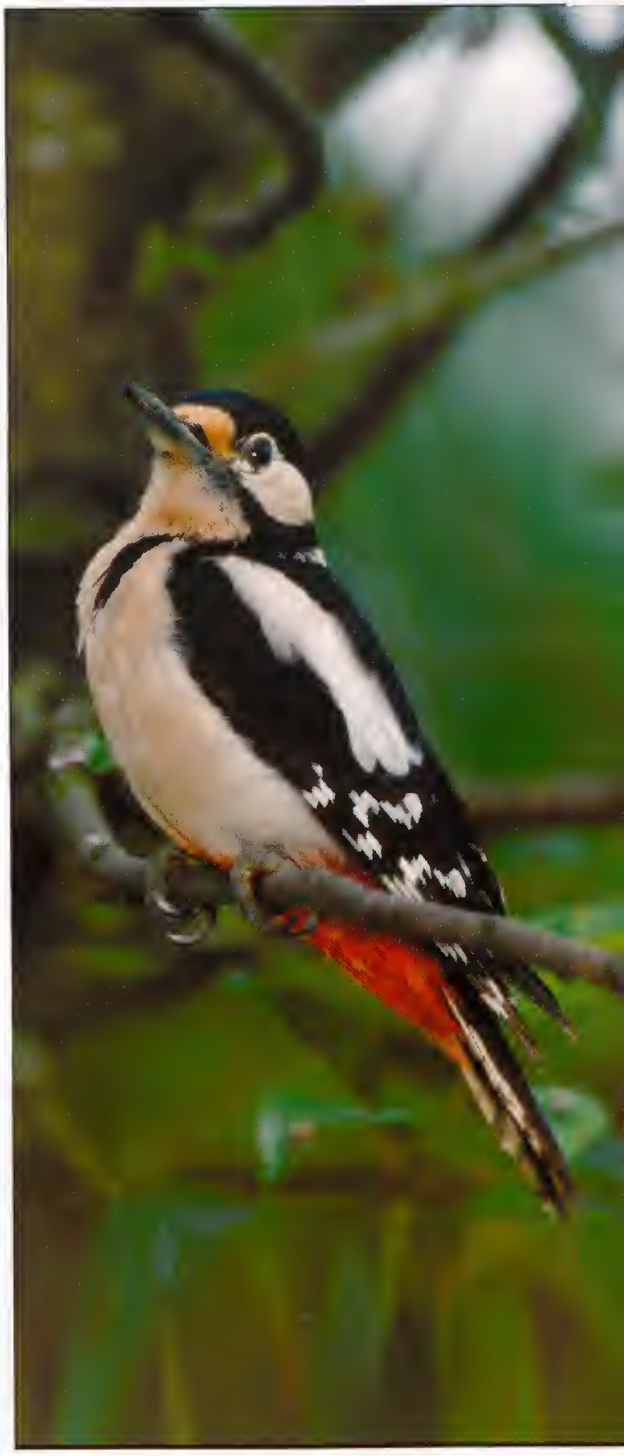
She flew off, returning a few minutes later to check the situation again. Then she flew to the bird table, but went off in alarm as the gardener started up the ride-on lawn mower. The mower came between the hide and the bird table, but as soon as it had passed Mum and Junior were on the table and then Mum was inspecting the feeder. The mower came round again, and the birds went away.

Junior returned a few more times, each time inspecting the place where the feeder used to be, and only occasionally coming to the bird table. The adults conferred in the ash tree, but neither seemed interested in food. I did manage to get one picture of Junior on the feeder: he had just got to the stage of being able to perch on vertical surfaces, but still didn't know how to get at the peanuts.

By the time I left, he was just getting the hang of it. I did get a few more pictures, before removing the hide and leaving the garden ready for the new owners.

Incidentally, the blue tits and great tits found the feeder in its new position within five minutes. After four hours, the house sparrows still hadn't discovered it!

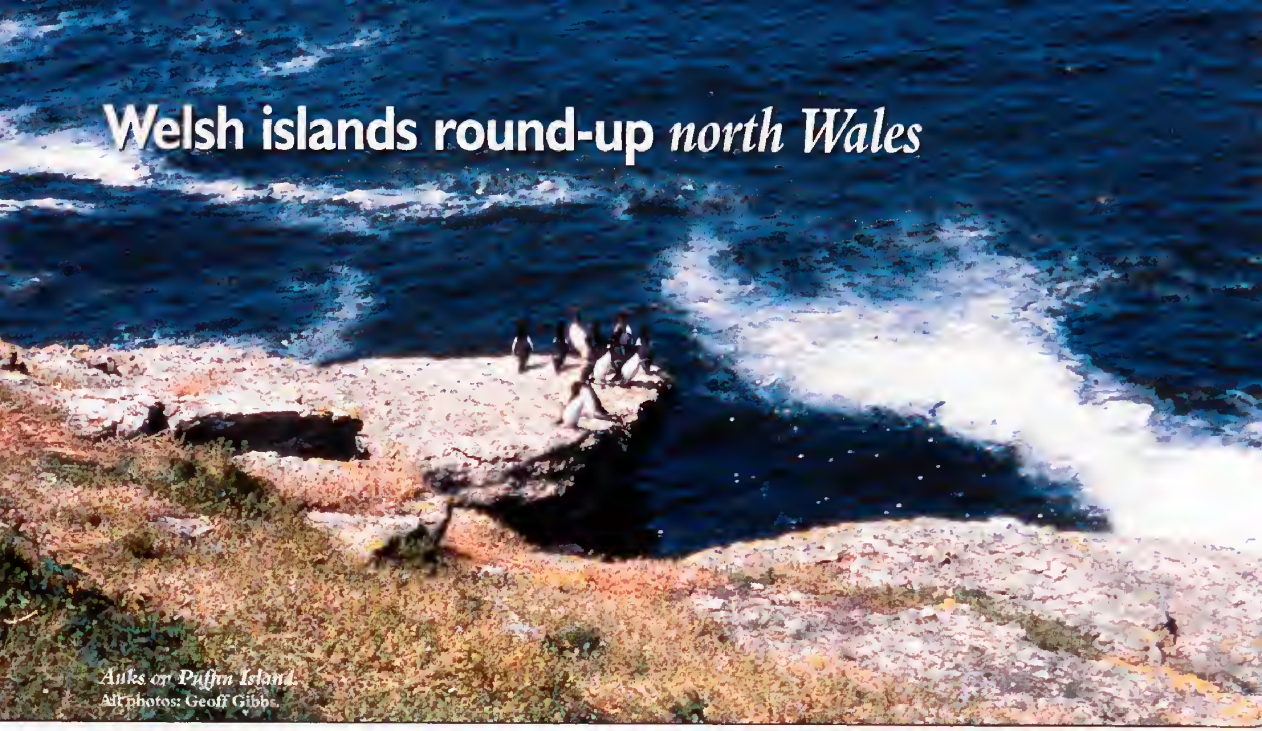
Annie Haycock is a naturalist and wildlife photographer.



Y stori tu ôl i'r lluniau

Wrth i Annie Haycock dynnu lluniau o gnocell fraith fwya' a'i chyw yn bwydo yng ngardd cymydog, fe ddysgodd lawer amdanyn nhw. Er mwyn cael llun yn erbyn cefndir naturiol, fe symudodd y ffotograffydd yr offer bwydo. Fe gymerodd hi hydoedd iddyn nhw sylweddoli ble'r oedd y bwyd wedi mynd a, hyd yn oed wedyn, doedd gan y cyw ddim syniad sut i gael at y cnau. Roedd y titwod wedi deall y cyfan o fewn pum munud!

Welsh islands round-up *north Wales*



Auks on Puffin Island.
All photos: Geoff Gibbs.

For sea birds like razorbill and Manx shearwater, which can live longer than many humans, the islands off the north Wales coast provide family homes, places from which they can launch themselves aloft to exploit the larder of the seas. In his round-up of island life, ***Geoff Gibbs*** *reminds us of the appeal of being close to the elements, surrounded by wildlife.*

Elder scrub on Puffin Island.

Puffin Island

A day trip in June with Snowdonia Society members gave a fascinating insight into life on an island with lots of guano and no grazing herbivores; rabbits were last seen here in June 1963. We found no signs of rats (see *Natur Cymru* No 1), but were amazed at the dense growth of elders on top of the island, and the brambles and dense grass between cliff edge and elder. We counted 22 puffins, mostly on the sea but a few on land, suggesting about the same population as in 2001. The puffins might be encouraged to come ashore and dig burrows if there was short turf along the cliff top. Introducing goats to graze down the rough grass and elder is one option being considered by CCW; the owners (Baron Hill Estate) are believed to be sympathetic, and many of the burghers of Llandudno would love to find a new home for some of the marauding goats from the Great Orme.

The excellent new avifauna for Anglesey by Peter Hope Jones and Paul Whalley (reviewed in the last *Natur Cymru*) includes a real bonus for Puffin Island enthusiasts: a lengthy chapter by Richard Arnold entitled 'A History of the Birds of Puffin Island'. This covers vegetation changes and detailed accounts of the breeding seabirds (currently 11 species including the latest colonist, the black guillemot), plus land birds such as wren, dunnock and wood pigeon. The herring gull colony, around 15,000 pairs at its peak in 1970, was down to less than 1,000 pairs in 1986; the adult gulls are thought to have contracted botulism whilst scavenging on local rubbish dumps. This chapter on Puffin Island is a real tour-de-force, and will be the standard reference on this fascinating island for years to come.

Bardsey Island (Ynys Enlli) & The Gwylans

Birds getting older and older

The Manx shearwater first ringed in 1957 was present again in 2004, and is now at least 51! (*Natur Cymru* 5, p37). Another 'oldest' this spring was a razorbill at least 42 years old. These are both species which only lay one egg per year, and experience quite heavy mortality in the early years before they start breeding. This implies quite long life expectancy once they start breeding, and a few birds living to a ripe old age. Some even outlive their researchers!

Breeding birds in 2003

The Bird Observatory's Report for 2003 is now available (Observatory details below).

Puffins (at least two pairs) nested again on Bardsey, but disaster seems to have struck at Ynys Gwylan Fawr in Aberdaron Bay; 1,300 burrows were checked but only 307 were occupied, and a mere five young found.

A thorough survey of two scree slopes on Bardsey produced 36 sites occupied by storm petrels. Skylarks bred for the first time since 1978, on the rather undergrazed south end of the island. Lack of short turf to feed on continued to hit the wheatear population, which was the lowest ever at only three pairs.

Getting the grazing right

Tenant farmer David Barnden has now been through three lambing seasons on the island and is doing his best to manage his stock to meet Enlli's conservation demands. Two requirements are short turf in some areas for choughs to feed in, and getting the grazing of the maritime heath right. One problem he faces is too much grass in the summer, and not enough in the winter; the island is basically a hill farm without the possibility of shipping sheep off to the lowlands for the winter. David has quite enough headaches getting his lambs and old ewes off for sale at the end of the season; trying to bring some back in early spring would be a nightmare! One solution being considered is to bring more cattle on for the summer, to supplement the small resident herd of Welsh blacks.

Dolphins and porpoises

The Whale and Dolphin Conservation Society were on Bardsey looking out for cetaceans in July and September. Harbour porpoises, bottlenose dolphins (13 through the Sound on 9th July) and common dolphins (four on 3rd September) were seen from the island. The area off Pen Cristin was particularly attractive for porpoises with young calves. Risso's dolphins were recorded outside the WDCS visits – 18 through the Sound on 26th August, and up to ten on two dates in late September.

Sheep leaving Bardsey Island.

A purple patch

The latest news from the island is of lots of unusual birds. Between 22nd and 25th April these included a red-rumped swallow, a cirl bunting (normally confined to Devon!), hoopoe and serin, and a stupendous arrival of the elusive grasshopper warbler – 362 on the 24th after an overnight attraction to the lighthouse which also brought in 1,500 willow warblers. Islands are really exciting places to be on days (and nights) like this.

Perhaps the best May bird was a corncrake which spent four days on the island, the first here for 16 years. This was followed by a marsh warbler, a golden oriole and a hundred spotted flycatchers. There were two pairs of shelducks raising families in the sheltered bays on either side of the narrows: in the first week of June, one family still had eight ducklings and the other six.

Getting away from it all

It's possible to stay on Bardsey Island: contact the Observatory on 01626 773908, www.bbfo.org.uk or the Bardsey Island Trust Office, Y Gegin Fawr, Aberdaron, Pwllheli, Gwynedd LL53 8BE. Tel: 01758 760 667 or see www.enlli.org.

The Skerries

This group of small islands off the NW Anglesey coast continues to harbour a large tern colony. The RSPB summer wardens in 2003 & 2004 reported over 1,500 pairs of arctic terns each year, producing around 2,500 fledged chicks in 2003 but only 700-800 this year. Over 100 pairs of common terns also bred. Roseate terns have not yet returned to breed, having decamped from Anglesey across the Irish Sea in the late 1980s. Pufffins (314 pairs) seem to be on the increase. Terns are doing well elsewhere on Anglesey, with over 1,500 pairs of Sandwich terns nesting on two small islands at Cemlyn lagoon (NWWT) this year.

Thanks to **Ian Sims** (RSPB) for the Skerries figures.

Geoff Gibbs is a keen birdwatcher who loves going to Bardsey to stay at the Bird Observatory. He is on the Bardsey Trust Council and also the Council of the British Trust for Ornithology, looking after north Wales interests there and promoting BTO locally.

Bywyd gwyllt yr ynysoedd

Dyma crthygl gan yr adarwr Geoff Gibbs am yr adar a bywyd gwyllt ar ynysoedd Seiriol, Enlli, y Gwylanod a'r Sgeris yn ystod yr haf. Bu aelodau Cymdeithas Eryri ar Ynys Seiriol ym Mehefin yn gwneud arolwg. Does dim cwningod na llygod mawr yno ond mae tyfiant trwchus mewn mannau ac mae'n bosib y bydd geifr yn cael eu cyflwyno i'w bori. Canfuwyd 22 pâl. Bu aelodau'r Gymdeithas Gadwraeth Morfilod a Dolffiniaid ar Enlli ym mis Gorffennaf. Bu 13 dolffin drwy'r Swnd un diwrnod. Canfuwyd nifer o adar anarferol ar yr ynys.

The mainland from Puffin Island

Needle exchange – *from plantations to semi-natural habitats*

Photo: Chris Tucker

The woodland estate which the Forestry Commission manages is not all about trees. Within it are many valuable open wildlife habitats. Work to conserve these, and to restore ancient woodland sites to their former glory, swapping conifer needles for broadleaves, is adding to the richness of this estate, and the benefits which it will offer present and future generations, as ***James Laing*** *and* ***Chris Tucker*** *explain.*

It is a common misconception that Forestry Commission Wales (FC Wales) only manages forests and woodlands, and an obvious conclusion to draw from the name of our organisation. But the truth is that we actually manage a lot more. Out of the Assembly Woodland Estate of 128,013 hectares across Wales – an area roughly the size of Anglesey – we manage habitats including ancient woodland sites, heaths, sand dunes, and upland and lowland bogs. This is a lot of priority habitat which we are taking major strides to restore, where appropriate, to a semi-natural state.

Sand dune habitat

We manage three woodland blocks on sand dune habitat – Newborough Forest on Anglesey, Morfa Harlech in Gwynedd and Pembrey Forest south of Carmarthen. There are ongoing discussions with stakeholders about the future of Newborough, a Corsican pine forest planted in the 1940s. One proposal is to remove groups of trees from the dunes and slacks near the beach, so that dynamic dune mobility can be encouraged once again. We have already removed tree cover from a few small selected areas, but true dune mobility will only be created once the stumps are either removed or have rotted down after a considerable period of time. This would still leave most of Newborough Forest as a woodland habitat.

Pembrey Forest is a Corsican pine forest planted in the 1930s and 40s on the sand dunes of Pembrey burrows and a redundant munitions factory. After a difficult establishment phase, the pine has grown successfully and is producing quality timber. The forest has been well thinned and several carefully designed areas have been clearfelled. The diversity this has created in structure, along with differences in topography and moisture levels, supports an enormously wide range of opportunities for wildlife.

The shelter from the prevailing wind and salt spray provided by the mature stands has created an ideal environment for a vast array of plants, often more associated with dune habitat than forests, and in turn a wonderful collection of invertebrates. We manage the rides to encourage food plants for the butterflies and moths, and they find Pembrey Forest an ideal habitat. Surveys carried out since 2001 have found 29 species of butterfly and 323 species of moth. Three are UKBAP priority species – marsh fritillary, double line and waved carpet moth. Also present are the small blue, silver-washed fritillary, dingy skipper and grizzled skipper butterflies, the latter being the largest of only three known remaining colonies in south Wales.

Photo: Michael Hammett.

Dingy skipper butterfly.

The forest is also home to a variety of birds, from goshawks to crossbills. The plant community is extremely diverse with various rare species including round-headed club rush and even a naturally seeded *Yucca*, which must have crossed the Atlantic as a seed. The several ponds in the forest add to the diversity of habitat and one hosts a nationally rare *Sciomyzid* fly, which preys on snails.

So in Pembrey Forest, what on paper may appear as a monoculture of Corsican pine, is in actual fact an extremely diverse and interesting forest and open habitat matrix.

Heath and bog habitat

During the establishment of forests in the middle of the last century, many heath and bog habitats were affected by the ground preparation and planting techniques for the new plantations. Heaths on acid soils provided ideal growing conditions for pine and many were ploughed and planted. A significant area is now being returned to heath by removing these plantations. At Broad Meend in the Wye valley a young plantation of pine has been flailed, a process which mulches the trees, reducing the volume of material. The resulting 'mulch' has been removed from the site, allowing the natural habitat to flourish by giving the heather a chance to regenerate. The removal of the trees has also benefited the hydrology of the adjacent Cleddon Bog SSSI, which was deteriorating due to fluctuations in the water table.

Many bogs were drained during the establishment of forests, the aim being to dry them out to improve conditions for growing trees. This resulted in the loss of the bog habitat plants and animals. In several of the large upland forests we have taken steps to restore the wet conditions. In North Tywi Forest, near Tregaron, a system of four bogs were planted with lodgepole pine. Some failed to grow well, but others became quite sizeable and threatened to dry the bog out even further. With the Countryside Council for Wales' advice, the trees were cut to prevent further drying and shading. The felled trees were used to help block up the drains, to slow the water flow and allow sedimentation to occur. We also used bales of straw to help with blocking and speed up the process. Any brash material left over was carefully placed, as its decomposition would enrich the soils and possibly result in rarer specialist plants being outcompeted by grasses such as *Molinia*.

The technique has been successful and the open water areas on the bog no longer dry out. Goldeneye and tufted duck have returned and the number of dragonflies has increased dramatically. The wetter conditions favour *Sphagnum* mosses, the main plant in bogs, and rarities like sundews have increased in number due to the lack of shading.

Similar schemes have taken place in Cwm Einion and Hafren Forests in the Cambrian Mountains of mid Wales.

Ancient woodland sites

Ancient woodlands in Wales are a highly prized and finite resource, but in the middle of the 20th century they suffered major losses. Many were depleted by the needs of two World Wars, and often acquired from owners without the resources for restocking and restoration.

The traditional uses of hardwoods were in decline by this time, and a new emphasis was put on timber production. The need for a strategic reserve of timber was seen as paramount for decades after both wars, and little was known – and even less appreciated – of the ecological and historical significance of the ancient woods. Most were extensively replanted with conifers or beech in the years between the 1930s and 1960s, when they were acquired by the Forestry Commission with the honest intention of turning them into productive stands of commercial timber. This entailed extensive felling of surviving native trees, ring-barking of oak and other unwanted species, the bulldozing of derelict and unwanted hazel coppice, the under-planting of stands with shade tolerant timber species such as western hemlock and beech and the poisoning of trees regarded as uneconomic. Comparatively few woods escaped this treatment.

Ring-barking kills off trees. Photo: CCW.

However, the situation described above is not obviously reflected within the sites as they are found today. In practice, much of the planned conversion to conifer was compromised by increasingly high costs: these were essentially labour intensive activities with little or no immediate return. Some stands were managed to the highest standards while many others received little or no silvicultural treatment following planting. Areas remained unthinned or uncleaned and there was natural regeneration of native trees. Many species of planted tree did not perform as expected. The extent to which the planted stands have suppressed and replaced the original native woodland varies astonishingly. Much of the original flora and understorey persists in many places, especially where plantations are on base rich soils suited to ash, maple and hazel.

Experience has shown us that these woods should not be written off as destroyed by past planting policy and practice. Many are rich in the plants, fungi, insects, birds and mammals typical of our native woodlands. They are often home to species now sufficiently rare or declining to have become labelled as Red Data Book species, or placed on the Species Recovery Programme as worthy of particular attention. Dormice, great crested newts, many fritillary butterflies and a long list of other species such as rare beetles, plants, mosses and flies are found within FC Wales' ancient woodland estate.

Ancient Woodland Project Survey

In 1985 the Government's Broadleaves Policy recognised the special importance of ancient woodland habitat, and application of this policy has dramatically reduced loss and damage. We began to restore conifer plantations to native broadleaves in the late 1980s. To date, restoration has been extensive but poorly recorded and not part of an ordered programme. The quality of data for FC ancient woodlands has been poor, and was never designed to support decisions on restoration.

The requirements of UK Biodiversity Habitat Action Plans (HAPs) and forest certification under the UK Woodland Assurance Scheme (UKWAS) have stimulated a more systematic approach. Of the 62,043 hectares of ancient woodland in Wales, we manage some 29 per cent. You cannot begin the process of restoration unless you know exactly what you've got, so to this end we instigated an Ancient Woodland Project Survey. Our aim was to collect information that would enable us to make informed decisions about restoration. Instead of looking at priorities within sites, we set out to complete an overall assessment of the character and relative importance of different parts of the Assembly Woodland Estate.

At the outset of the survey little was known about the range of woodland types found within our ancient woods, nor of the restoration potential of ancient woodland or the accompanying costs. Records of past and present wildlife interest can be poorly organised and do not readily allow consistent reporting of the benefits of wildlife management and other conservation measures, nor of measuring progress towards desired goals.

We now possess the most comprehensive and accurate dataset on the extent and nature of these ancient woodlands. They vary greatly in character and distribution. There are critically important forest areas – the Wye Valley and Meirionnydd Oakwoods, for example – where we are a key player in the delivery of programmes of ancient woodland management. More typically, we manage important woodlands in landscapes predominantly in private ownership, where our activities demonstrate rather than determine the nature and pace of ancient woodland conservation and management. The restoration of ancient woodlands is a slow process and it is important to identify and convert those woodlands which will deliver the greatest biodiversity benefits while taking into account the costs and feasibility of restoration. Not all sites will warrant restoration and we must also bear in mind that the transformation is a gradual process, using low impact silvicultural systems, and successful native woodland development depends on there being sufficient sources of colonising flora and fauna.

Restoration is a long-term process on most types of habitats, if not all, and we are committed to doing our share. It all needs funding, but the use of innovative methods and sensible allocation of resources can help deliver the desired result. Transformation will not happen overnight but future generations will be able to enjoy the benefits of restoration started today.

James Laing is the Environment Advisor for FC Wales, based in Aberystwyth. **Chris Tucker** is the Conservation & Heritage Planner in Coed y Cymoedd Forest District based in Resolven.

FC Wales have recently published a practice guide entitled *Restoration of Native Woodland on Ancient Woodland Sites* that gives practical advice on restoration.

The Ancient Woodland on the Assembly's Estate Survey Report is available from FC Wales, National Office, Victoria Terrace, Aberystwyth, SY23 2DQ.

Clearing pines with a flail to restore heathland. Photo: David Rees.

Codi cysgod y coed

Er gwaetha'i enw, mae'r Comisiwn Coedwigaeth yn rheoli llawer mwy na fforestydd – gan gynnwys rhostiroedd, corsydd a thwyni tywod. Mae'n ceisio adfer llawer o'r rhain ac yn disodli coed pin gyda choed brodorol. Mae fforestydd twyni tywod mewn tri man – Morfa Harlech, Niwbwrch, lle mae cynlluniau i dorri peth o'r coed i adfywhau'r twyni, a Phenbre, lle mae cyfoeth o blanhigion a chreaduriaid. Yng Nghoedwig Gogledd Tywi ger Tregaron, mae enghraifft o adfer corsydd a sychwyd adeg plannu'r coedwigoedd. Torrwyd coed a defnyddio'r boncyffion i arafu llif dŵr oddi yno. Bellach mae'r hwyaid yn ôl! Cafwyd cynlluniau tebyg mewn coedwigoedd eraill. Yr angen am bren a ddinistriodd lawer o goedydd hynafol o boptu'r Ail Ryfel Byd. Mewn llawer, mae'r coedydd brodorol wedi ailgydio ac mae sawl rhywogaeth brin yn goroesi yno. Yn niwedd yr 1980au y dechreuodd y broses o droi coedydd pin yn ôl yn goedydd brodorol. Y Comisiwn sy'n rheoli tua 29% o goedydd hynafol Cymru, a rhai yn goedydd allweddol. Araf yw'r broses ond bydd cenedlaethau'r dyfodol yn gallu mwynhau ffrwyth y gwaith adfer sy'n dechrau'n awr.

More apple detectives needed – *the search for Welsh apple varieties*

Sheila Leitch and curious cattle with a Monmouth Green/Landore tree in the background. Photo: Sheila Leitch.

Steeped in wildlife and history, old apple orchards and the varieties they contain are a wonderful if diminishing habitat, a kind of archive of natural and human history. Researching this archive takes dedicated detective work, as ***Sheila Leitch*** *describes.*

The museum orchard at Tredomen Court, nr Llanfilo, Breconshire. Photo: Sheila Leitch.

When the Marcher Apple Network (MAN) came into being ten years ago, the idea was to search the orchards and gardens in the counties bordering the Welsh Marches for the old fruit varieties which were in danger of dying out as they were rarely being propagated. We were aware that many of the fruits illustrated and described in *The Herefordshire Pomona* were no longer seen and these were our first priority. However, some of the older generation on the Welsh side of the border talked of an apple, much loved by them when, as boys, they had gone scrumping.

We eventually located a couple of very old trees of this variety, Monmouth Green, in a remnant orchard at Aberedw, and this was our first local Welsh apple to be grafted and safeguarded. It is now finding its way back into the area where once it was widespread. We have since found it under the name Landore, at sites in Herefordshire. Kilvert mentions the miller at Clyro, south Radnorshire, who, at the end of a visit to the mill "…brought me three Landore apples, an old fashioned keeping apple, very good." Another local apple, known as Carnation, had been a great favourite in the Glasbury-on-Wye gardens and orchards and some very old trees have survived. This was a very early good-sized cooker, ready in late August and early September. It made an excellent apple pie and baked well, supplying the kitchen until later cookers were ready. It is a poor keeper, but, by the time the skin turns primrose yellow, is quite pleasant eating.

It seems probable that it was raised and named by Reverend John Hughes, who was born in Glasbury in 1741 and was curate there when he died in 1808. He was known as a pomologist, (a person who studies and cultivates fruit) and planted up many of the local orchards. Carnation too has now been propagated, but we are calling it Hughes' Carnation to avoid confusion with the Carnation listed in Muriel Smith's *National Apple Register of the United Kingdom*. That variety has many synonyms, and is a very late dessert apple of the reinette type, heavily russeted. Together with many other varieties we have since found, the young grafted trees are planted in one our 'museum orchards', which act as reference collections and gene banks.

The start of apple days

The charity Common Ground, founded in 1988, published a 'Save our Orchards' campaign leaflet and initiated 'Apple Day' on 21st October 1990 in the Old Apple Market, Covent Garden. Later, the 'Apple Day' pamphlet was published to help launch the idea of people celebrating the diversity of fruit grown in Britain and Ireland. This initiative was the start of a countrywide revival of interest in old and local fruit varieties. By the tenth anniversary, more than 600 'Apple Day' events were held countrywide and MAN had 137 varieties on show, all known from before 1900. It was at an identification session at a 'Big Apple' weekend at Putley, Herefordshire, that the founder members of MAN first met up with each other. The *Common Ground Book of Orchards*, published in 2000, includes a gazetteer of local varieties of fruit under counties or areas. Most English counties have long lists, Scotland has half a page, Ireland a third, but Wales only occupies six lines. These are mostly cider apples, plus the dessert apples Cissy, Baker's Delicious and St Cecilia. Wales is obviously very under-recorded, but MAN is working on that deficiency.

Lovely blossom on a healthy young tree at Tredomen Court, Breconshire. Photo: Sheila Leitch.

Whether any apple variety can be called Welsh or English is a matter of opinion. Only the true crab apple, *Malus sylvestris*, which bears spines and is very rare, can be considered native in Britain. It used to be thought that it was one of the forbears of the domestic apple. Geneticists have long been aware that the wild fruit forests of Kazakhstan are the homeland of the domestic apple. Professor Barrie Juniper, formerly tutor in Plant Sciences at St Catherine's College, Oxford, has carried out DNA testing on the wild apples brought back from his expedition to the Tien-Shan range of mountains on the Russian-Chinese border, where fragments of the original fruit forest still survive. He is now satisfied that the genuine crab apple is not an ancestor of the domestic apple and that these are all derived from one of the wild species, *Malus sieversii*, which shows great diversity.

The expedition found a range of large, sweet apples, growing at heights up to 6,000 feet. He lectures most entertainingly on how, after spreading across Russia and Europe, from pips in the dung of bears and horses, which selectively ate the best fruit, a range of them were brought to Britain by the Romans. The thousands of varieties of domestic apple now in existence have been bred from this species, many arising as chance seedlings which had attractive enough qualities and disease resistance to be given a name and popularity in their home patch.

Early Welsh names of apples

Emrys Williams, when Assistant Keeper in the Department of Manuscripts and Records at the National Library of Wales, knew of a list headed 'Welsh Names of Apples' which was printed in the Cambrian Journal, Vol.III, 1858, and drew it to the attention of one of our members. The introductory paragraph begins:

"The following is a list of the names by which the Welsh peasantry designate the several sorts of apples that are grown in the Principality. It will be seen that very few are translations of English terms; they appear to have been invented by the natives themselves, according to the characteristics which the various kinds of apples present respectively to their notice."

The list of 67 varieties then follows, some having up to four synonyms, mainly from the Glamorgan area. They were drawn from a collection of apple names compiled by Edward Williams (Iolo Morganwg 1746-1826), poet and antiquary, who was born at Llancarfan, Glamorgan. This was our first indication of the wealth of local apples once grown in south Wales.

One apple we believe we have refound is Brith Mawr, once popular in the south Wales area. Some detective work by one of our members in St Mellons located a tree known by this name to three generations of the family. Three rather poor specimens were collected and taken to Joe Broom, then in his 90s, who used to run Basham's Nursery in Bassaleg, where St. Cecilia was bred. He recognised one, well speckled and ridged, as being typical of this variety. Sadly, he died last Christmas.

Marged Niclas.
Photo: Mike Porter.

Old orchard of Marged Niclas, Tirallen. Photo: Pauline Sykes.

The older folk who may remember these forgotten varieties are the last chance of confirming that a fruit with an inadequate description is the genuine article. Graftwood has been taken and Paul Davis, our member of Dolau-hirion Nursery, Capel Isaac, nr. Llandeilo, who is now specialising in the Welsh varieties, has added it to his growing collection. It could be one of the varieties listed under another name in the Cambrian Journal list. From these examples, it can be seen that we know nothing, as yet, of the origins of these apples bearing Welsh names. How far back are they known? In 1994, a call came from the Countryside Council for Wales asking if a couple of us from MAN would come over and survey some of the orchards around Llandeilo, to identify the fruit growing there, so that the same varieties could be grafted and planted as part of the pilot agri-environment scheme Tir Cymen. Three of us went over and met a Field Officer on two days, to look at the 12 sites they had located. The first day was very disappointing as we barely found an apple in six orchards. It had been the coldest May since1987. The lack of pollinating insects, capped by a very late frost, had prevented fruit, which is essential for identification purposes, from setting.

The second day was slightly better, with one large old orchard, Tirallen near Llanwrda, probably planted around 1920, having a reasonable crop on most of the trees. Several trees were of the same variety there, with a distinctive upright growth, and bore heavy crops even in that bad year. It was named for us as Marged Nicolas, but known in some orchards as Morgan Nicolas. A hardy, dual purpose apple with a distinctive flavour with a hint of pineapple, it keeps well into the spring. We returned to Tirallen the following year, when the crop was better, but have still not identified all the fruit.

What's in a name

At that time no-one had seen the name written down, so I chose to spell it without an 'h'. I have since learned that it should be Marged Niclas and D.J. Williams, in his book *The Old Farmhouse* (1961) mentions his grandfather planting, about 1840, Afal Vicar, Afal Niclas and Afal Bwen Bach. Afal is the Welsh for apple and 'Little Bowen' was said to be the land agent for the Edwinsford Estate near Talley. When he was there and who the vicar was are two more questions. Paul has supplied me with notes on the varieties and local knowledge has suggested that Marged Niclas may have been a commemorative apple associated with the Nicholas family who owned large estates in the parishes where this apple is found.

As librarian of Powys Family History Society for the Brecon Group, I hold many useful records including outline early wills, and have searched for a link of this name with the area. It was exciting to find one will of 1688 for Morgan Nicholas, gentleman, of Talley. A check of the Parish Records of Talley which go back to 1685, and of the adjacent parishes, may yield some clues.

Twll Tin Gŵydd at Tirallen orchard. Photo: Pauline Sykes.

Another variety from this area which has been grafted by Paul is Afal Glansevin, an early yellow eater, named after the Glansevin estate near Llangadog. It has yet to fruit, so needs to be checked in case this name turns out to be a synonym and the apple may be an import from England. Pig yr ŵydd (Goose's beak), a very tasty late cooker with extremely high disease-resistance, is also from this area and Twll Tin Gŵydd is the name given to a codlin, an early cooker which cooks down to a froth. The name refers to the other end of a goose and it was some time before the translation was offered up to us!

On a visit in 1997 to see an old orchard at St. Dogmael's in Ceredigion, we were introduced to three more Welsh varieties, Pig Aderyn (Bird's Bill) Pen Caled Afal (Hard-headed Apple) and Afal Pren Glas (Green Tree Apple). The first two appear to be multipurpose varieties making good light ciders while Afal Pren Glas is a dessert apple. They were of the burrknot type, known in south Wales as pitchers, which develop great burrs on the stems from which tubercles develop and roots will grow if two or three year old wood is planted deeply. This seems to be a trait quite common amongst the varieties which thrive in the damp, high rainfall areas of the west, and some of the native Irish trees have this capacity. The children of nearby Llandudoch have collected the names of other Welsh varieties for a school project. Some of the names were easy to translate, for example Afal Melys (Sweet Apple). Others, partly due to the dialect in that area, need a Welsh scholar to interpret. These examples are given in some detail to indicate the wealth of local names of fruit which are still to be found when a search is made in a locality. Any information from readers would be very welcome and photocopies of the Cambrian Journal list can be sent to anyone with an interest in the Welsh apple names of south Glamorgan and Monmouthshire.

Appeal for apple detectives

If we are to safeguard the last of the old survivors we need as many helpers as possible sending in news. MAN run an identification service for members, for whom the charge is only £1 per variety. Three good typical specimens are needed and should be mature and well-wrapped, and sent to me at the address below. For non-members the charge is £3, as the team has to gather from a wide area and travelling expenses have to be paid.

Healthy fruit are necessary for identification. Photo: Sheila Leitch.

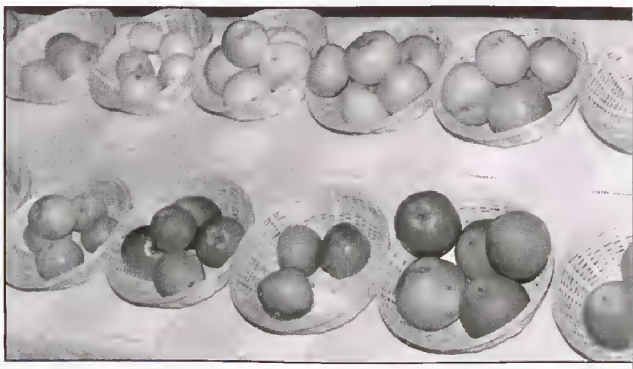
Paul Davies 'showing how' at a training course on restorative pruning run by 'Glasu'. Photo: Sheila Leitch.

The Network (£5 membership) holds training days in the various skills such as winter and summer pruning, renewal pruning for old trees, and the basic techniques of identification, though the learning process is continuous. Since Glasu (the European Leader+ programme in Powys) has come into being, they have funded the courses as part of their aim to promote the importance of orchards and their products. This year our Apple Day event is being held at the beautiful venue of Baskerville Hall, Clyro, near Hay-on-Wye, on Sunday 17th October, from 2.00-5.00pm. A large display of fruit will be on show, our identification panel will be there, some of Paul Davis's grafted potted young trees will be on sale and apple-based teas will be available. With plenty of parking space, it is hoped there will be a large attendance and some interesting finds made.

Orchard wildlife

Old orchards, as long as they have not been subjected to spraying, are havens for wildlife. The grassland may have a range of wild flowers and mistletoe often clothes the branches in orchards in east Wales. Lichens and mosses on the trunks and branches harbour insects, as do fallen branches and rotting wood. Blossom provides an early source of pollen and nectar. Woodpeckers nest and feed there. The habitat is much favoured by spotted flycatchers and nuthatches while treecreepers are frequently to be seen, searching the bark for insects. Summer brings butterflies such as small skippers and meadow browns and in autumn the blackbirds will soon show you which are the ripest and most flavoursome varieties, while intoxicated butterflies enjoy the fermenting windfalls. In winter the fallen fruit provides food for thrushes and the incoming visitor flocks of fieldfares and redwings. Conservationists are increasingly realising the value of these mixed habitats, which are neither woodlands nor meadows, for encouraging biodiversity.

Many orchards were planted towards the end of the 19th century, following the spectacular displays of fruit put on in London by the National Apple Congress and the Royal Horticultural Society. More orchards were planted after the First World War. By the 1950s the acreage was falling rapidly and Powys experienced a decline of 99% during the century, 97% of which was in a 30-year period. This loss was partly due to many thousands of acres being grubbed up in order to benefit from EEC payments. In the 1990s grants led to further losses, with orchards of our superb Cox's Orange Pippin being removed. Now the same variety is imported, but the difference in flavour is very apparent. CCW helped slow the decline with their environmental grant scheme, Tir Cymen, for Orchards and Parklands, with the object of restoring traditional orchards and conserving valued wildlife habitats. The later Tir Gofal whole farm grant scheme also included orchard replanting.



MAN's 'Apple Day' display at Bodenhall, nr Hereford includes a stand by members Colin and Daphne Gardiner, winners in 2002 of 'True Taste of Wales' Gold Award for their organic apple juice available in 35 different varieties. Photo: Sheila Leitch.

Now the surviving old orchards are facing a new threat. Changes in the subsidy system of the European Common Agricultural Policy have created a financial inducement to clear orchards by January of next year, as traditional orchards have been omitted from land eligible for subsidy under the Single Farm Payment. English Nature and Common Ground have been active in lobbying DEFRA and the issue is being taken up with the European Commission. Sue Clifford, one of the founders and now the Director of Common Ground has said "This may be the ecological equivalent of the dissolution of the monasteries. The loss of even one old orchard can mean the extinction of an apple variety." Apparently some concessions are now being made.

In Wales and Scotland a different system of calculating entitlements will operate, based on the historic usage of the land during the three-year period 2000-2002. Details of how this will operate are yet to be determined and it is currently unclear as to whether Welsh orchards are under the same degree of threat as those in England. However, the subsidy changes add urgency to the need to search for the local fruits and safeguard the genetic diversity of the traditional apples and pears of our land.

Sheila Leitch began her working life at Plas y Brenin, Capel Curig, later becoming Assistant Regional Officer with the Nature Conservancy for the South Wales area. She is the Network Co-ordinator and Newsletter Editor for the Marcher Apple Network.

Sheila Leitch, Wye View, Glasbury-on-Wye, Powys, via Hereford, HR3 5NU. Tel. 01497 847354.
MAN Website address www.marcherapple.net

Time runs out for old varieties. Photo: Sheila Leitch.

Chwilio am afalau Cymreig

Cynhaliwyd y "Diwrnod Afalau" cyntaf yn 1990 yn yr hen farchnad afalau yn Covent Garden. Yn ei sgil daeth cynnydd yn y diddordeb mewn hen fathau o ffrwythau a'r awydd i ddathlu'r amrywiaeth o ffrwythau sy' n cael eu tyfu ym Mhrydain ac Iwerddon.

Ddeng mlynedd yn ôl dechreuwyd chwilio am fathau o hen ffrwythau oedd yn mynd yn brin mewn perllannau a gerddi yn ardal y Gororau. Cafwyd hyd i nifer o fathau o afalau gan gynnwys Carnation – afal coginio gafodd ei dyfu gan y Parchedig John Hughes yn ôl pob tebyg.

Ym 1858 lluniodd y bardd Iolo Morgannwg restr o 67 math o afal oedd yn tyfu yn Morgannwg. Dyma'r arwydd cyntaf o'r cyfoeth o afalau oedd yn arfer cael eu tyfu yn ne Cymru. Bu'r ûm ymchwil dan arweiniad Sheila Leitch wrthi'n ddygn a chredir fod un o'r afalau, Brith Mawr, oedd unwaith yn boblogaidd yn ne Cymru, bellach wedi ei ail-sefydlu.

Ym 1994 bu aelodau'r grŵp ymchwil yn chwilota perllannau ardal Llandeilo. Cafwyd hyd i afalau Marged Niclas. Mae'r awdur D.J. Williams yn sôn am ei daid yn plannu'r coed yma. Yn yr un ardal canfuwyd Afal Glansevin, Pig yr ŵydd a Tŵll Tin Gŵydd (!). Yng Ngheredigion daethpwyd ar draws tri math arall o afal lleol.

Mae hen berllannau yn gynefinoedd gwych ar gyfer bywyd gwyllt. Mae cadwraethwyr yn dod yn fwy ymwybodol o'u pwysigrwydd o safbwynt bio-amrywiaeth. Ond mae nhw dan fygythiad newydd wrth i newidiadau yn y system grantiau Ewropeaidd ddod i rym flwyddyn nesaf fydd yn cynnig arian am glirio perllannau. Mae'r newid yma yn golygu fod angen symud yn gyflym i ganfod ffrwythau lleol a diogelu'r amrywiaeth cyfoethog o afalau a gellyg sy'n tyfu yn ein gwlad.

Nodiadau'r **Cynulliad** / **Assembly** *Notebook*

gan / by **Katie-jo Luxton**

Yn ystod y pum mlynedd diwethaf ers datganoli, mae yna baradocs wedi dod i'r amlwg: mae hyrwyddo polisïau amgylcheddol i'r Cynulliad yn dasg hawdd ac anodd yr un pryd. Does yr un o Aelodau'r Cynulliad 'yn erbyn' diogelu neu gyfoethogi'r amgylchedd, ond mae hi wedi bod yn dasg anodd eu cael i ymrwymo i weithredu ar flaenoriaethau amgylcheddol, fel dirywiad mewn bioamrywiaeth.

Yn sicr, fe all amgylcheddwyr Cymru hawlio llawer o'r clod am y sylw y mae datblygu cynaliadwy wedi ei gael o fewn Agenda'r Cynulliad. Fodd bynnag, er gwaetha'r ffaith fod 'iaith' datblygu cynaliadwy i'w gweld fwyfwy o fewn strategaeth y Llywodraeth, mae'r cynnydd o ran pryderon 'gwyrdd' traddodiadol wedi bod yn siomedig o araf. Yn wir, mae yna amheuaeth gynyddol fod y diffyg cynnydd o ran blaenoriaethau amgylcheddol yn cael ei gymylu gan rethreg y Llywodraeth sydd ynghlwm wrth ddatblygu cynaliadwy.

Strategaeth Amgylcheddol y Gweinidog Carwyn Jones yw'r goleuni ar y gorwel a all unioni'r fantol. Erbyn hyn, mae Grŵp Cyfeirio, sy'n cynrychioli budd-garfanau amrywiol iawn, wedi cytuno ar gylch gorchwyl y Strategaeth, a hefyd y bwriad yw cynnal rhaglen o weithdai ymgynghorol er mwyn ceisio barn y budd-ddeiliaid ar y cychwyn. Yn y bôn, yr hyn a all brofi dyletswydd y Cynulliad o ran datblygu cynaliadwy fydd i ba raddau y bydd yn ymdrin â dirywiad mewn bioamrywiaeth, dulliau rheoli cynefinoedd a phecyn cynhwysfawr o fesurau i liniaru newid yn yr hinsawdd.

Roedd pythefnos olaf y Cynulliad cyn gwyliau'r haf yn ferw o weithgareddau, gyda'r ddogfen ddrafft *Nodyn Cyngor Technegol 8 ar Ynni Adnewyddadwy* hirddisgwyliedig yn cael ei chyhoeddi, sy'n pennu dull arloesol o ddiffinio meysydd lle gellir cael datblygiadau mawr. Yn syth ar ôl y cyhoeddiad yma, daeth y newyddion da y byddai Cymru'n cyflwyno cynllun amaeth-amgylcheddol lefel mynediad (Tir Cynnal), a fydd yn cynorthwyo ffermwyr i fodloni safonau rheolaeth amgylcheddol sylfaenol yn ogystal â'u cynorthwyo, gobeithio, i ddal eu tir yn y frwydr yn erbyn colli cynefinoedd a niweidio'r tirlun.

Y cyhoeddiad ynghylch 'coelcerth y cwangos' oedd newyddion annisgwyl yr haf, gan fod y rhan fwyaf ohonom o'r farn fod y marwydos wedi hen ddiffodd. Mae'n debyg ei bod yn rhy gynnar i ni asesu beth yw goblygiadau tebygol hyn o ran amgylchedd Cymru. Trwy ddod ag Awdurdod Datblygu Cymru dan adain y Cynulliad, fe allai ei weithgareddau ddod yn fwy uniongyrchol dan ddylanwad y Cynllun Datblygu Cynaliadwy, er na fyddai'r cyhoedd yn gallu eu harchwilio i'r fath raddau â chynt, yn ôl pob tebyg. Ni chyhoeddwyd unrhyw newidiadau i'r Cyngor Cefn Gwlad nac i Asiantaeth yr Amgylchedd, sef dau o gyrff amgylcheddol a noddir gan y Cynulliad, er bod Rhodri Morgan wedi gosod her amlwg iddyn nhw a chyrff eraill yn y sector o ran cyflawnhau'r trefniadau presennol fel y gallant ddal eu gafael yn eu cylch gorchwyl a'u hannibyniaeth yn y tymor hir.

Mae **Katie-jo Luxton** yn Adfocad Polisi ac yn Arweinydd Tîm Polisi Cadwraethol gydag RSPB Cymru. Fe allwch gael gafael arni trwy ffonio 02920 353 003 neu 07787 727 061.

The five years since devolution have revealed a paradox: advocating environmental policy to the Assembly is both easy and difficult. No Assembly Member is 'against' environmental protection or enhancement, but commitments for significant action on environmental priorities such as biodiversity declines have been hard to secure.

Welsh environmentalists can certainly claim much of the credit for the high profile of sustainable development on the Assembly's agenda. However, despite the language of sustainable development increasingly permeating the Government strategy, progress on traditional 'green' concerns has been disappointingly slow. Indeed, there is a growing suspicion that the lack of progress on environmental priorities is being obscured by the Assembly's sustainable development rhetoric.

The light on the horizon to redress this imbalance is Minister Carwyn Jones' Environment Strategy. A Reference Group, representing a wide spectrum of interests, has now agreed the terms of reference for the Strategy and a programme of consultative workshops is planned to seek stakeholders' initial views. A true test of the Assembly's sustainable development duty will be the extent to which it addresses biodiversity declines, habitat management and a comprehensive package of measures to mitigate climate change.

The Assembly's final fortnight before summer recess was a flurry of activity, with the long awaited release of the draft *Technical Advice Note 8 on Renewable Energy*, which sets out a ground-breaking approach to defining 'areas of search' for major developments. Hot on the heels of this announcement came the welcome news that Wales would introduce an entry level agri-environment scheme (Tir Cynnal), which will help farmers to meet basic environmental management standards and, hopefully, hold the line on further habitat loss and damage in the farmed landscape.

The 'bonfire of the quangos' announcement was the big surprise of the summer, as most of us thought these pre-devolution embers had been quietly extinguished. It's probably too early to assess the likely implications for the Welsh environment. The absorption of the Welsh Development Agency into the Assembly could bring its activities more directly under the influence of the Sustainable Development Scheme, although public scrutiny could well be reduced. No changes were announced to the Countryside Council for Wales or the Environment Agency Wales, the two environment Assembly Sponsored Public Bodies (ASPBs) although there is a clear challenge from Rhodri Morgan that they and others in the sector will need to justify existing arrangements to retain their remit and independence in the longer term.

Katie-jo Luxton is Policy Advocate & Conservation Policy Team Leader with RSPB Cymru. She can be reached on 02920 353 003 or 07787 727 061.

Green **Bookshelf**
Silff Lyfrau *Amgylcheddol*

So Shall We Reap
Colin Tudge
Penguin 2004, £8.99 softback
ISBN 0-141-00950-0

The Best of Breeds – A History of Welsh Black Cattle
Jenny Buckton
Gomer Press 2004, £19.99 hardback
ISBN 1-84323-291-X

Minibeasts – An Identification Guide
Peter Smithers, illustrated by **John Walters**
John Walters, www.johnwalters.co.uk
ISBN 0-9540256-2-8

For my money, ***So Shall We Reap*** is the best of an excellent crops of books which look at what has gone wrong with the food we eat, and how to get out of the mess we are in. Starting with a spell at Farmer's Weekly in the early 1970s, Colin Tudge has had three decades to acquaint himself intimately with the problems at the heart of food and farming, and to chew over that bigger issue concerning the relationship between human societies and the food we eat. For Tudge, how human beings respond to our collective hunger and greed is a defining issue.

As the title suggests, Tudge's thesis is one of Biblical proportions. At the outset he asserts that we need to look not just at where we are in relation to the great food and farming debate, but also at what we are. The problems of humanity thus become those of biology: we are biological creatures, although we do our best to hide this fact from ourselves. Even the most cerebral and ascetic of us have to eat. Acquiring and eating food is as central to our existence as you can get.

It is no wonder that we have developed farming to release most of us from the arduous business of feeding ourselves; indeed farming is the bedrock on which civilisations have been built. Far from being a problem, here lies what Tudge calls 'the wondrous serendipity of the whole food story': that enlightened husbandry supports the great cuisines of the world, which achieve gastronomic and nutritional perfection. Unfortunately, science, a welcome handmaiden to this craftsmanship, has become a coercive force at the behest of economists and politicians.

Thus Tudge balances hope for the future with despair about the road we have taken. He writes entertainingly as well as passionately, and at times I felt real indignation at what I was being told. I challenge you to read the chapter on meat, ('Meat, How Did We Get It So Wrong?') and not reassess your own eating habits, whether from the vegetarian or the meat-guzzling end of the spectrum.

Don't expect Tudge to take anything as read. He applies his scientific scepticism to each issue afresh. I was surprised that he hedged his own support for organic farming with so many caveats, but this careful, analytical approach can only add to the strength of the case he is making.

This is as important and forthright a book as you are ever likely to read. In his Afterword, Tudge concludes "that present-day economic and hence political ambitions are ludicrous". Perhaps we are all equally trapped by the delusion of unending, cost-free economic growth. We can only hope that people and nations will somehow, soon, abandon the treadmill we are on, and switch to Tudge's vision for an enlightened agriculture.

In the last issue I reviewed a delightful book on cattle by Twm Elias. When ***The Best of Breeds – A History of Welsh Black Cattle*** was published in time for the Royal Welsh Show, I was quick to buy a copy. What a disappointment. There is no shortage of historical quotes, information on the breed and its fortunes around the world, or pictures of Welsh Black cattle. Prominent members of the Welsh Black Cattle Society, many of whom get a mention, should be well satisfied.

Those with broader interests will be disappointed. The problem is not only the narrow focus of the book, the lack of analysis, description or evidence of thought. It is also the clumsiness of the language. This reader was constantly being tripped up by contorted constructions and meaningless sentences. It is disappointing that the text is available only in English, but perhaps it is enough to have to suffer it in one language.

To end on a sweeter note, I have been sent a copy of ***Minibeasts – An Identification Guide***. I passed this 36 page introduction to creepy-crawlies of all kinds to my young son. He commented that it was easy to read ("not like Lord of the Rings"), full of interesting facts, with an easy-to-use key, and very helpful, well-captioned pictures. He did make the observation, though, that "it doesn't tell you how to catch the minibeasts!"

Mammal *news*

Frances Cattanach provides a round-up of mammal news

Polecat. Photo: Michael Hammett.

Polecats

Unfortunately, road casualties continue to be a good way of helping to determine the populations of Welsh mammals. The three year National Polecat Survey is now well into its first year. It is especially important in Wales in that this is the traditional stronghold of this recovering species. After the first six months, 91 pure polecats have been retrieved from 86 different 10km squares, primarily as road casualties. Kate Williamson at the Snowdonia National Park is acting as a collection point for polecat bodies from North-west Wales, so if you see a corpse please contact her on 01766 772255.

In Gwent, Julian Branscombe reports that a Wildlife Trust staff member who has been watching the roads in the eight years since he lived near Raglan, in central Monmouthshire, saw no polecat corpses at all until summer 2002, and has seen about six in the last year. This rise is echoed by reports from various local farmers. Dave Thorpe, from the Environment Agency, picked one up on the A55 near Malltraeth, Anglesey in July. This is a particularly interesting record in that there are only recent records of polecat on the island.

Otters

Road mortality is recognised as a major factor influencing the recovery of otters in Wales. Gwent Wildlife Trust are aware of five otter corpses in the year up to August, suggesting high population levels, backed up by anecdotal reports, particularly from along the Usk. Reported road casualties for Wales in the late 1990s had risen to an average of about 33 per year, with 48 casualties recovered for post mortem in 2000. This latter figure was probably affected by high flood conditions experienced in the autumn of 2000, and could be an underestimate.

The Roads and Otters Steering Group (ROSG) Wales aims to address this issue. It brings together expertise from a range of disciplines, to identify roads where there have been a number of otter casualties and where possible carry out mitigation measures. Members of the group include Welsh Assembly Government, The Wildlife Trusts, Environment Agency, Countryside Council for Wales, police, local authority highway engineers, specialist consultants and academic institutions. A centralised database and casualty recording forms are an important part of the work. For more information, contact the secretary, Jill Jackson, by e-mail JillJackson@gwynedd.gov.uk

Thankfully, an otter reported by Steve Parrott on the Afon Braint, Anglesey in February was very much alive, and the second coastal otter survey of Pen Llŷn, carried out by the Dwyryd Otter Partnership and volunteers in May showed that all squares were positive as opposed to only 70% in 2002. I hope to be able to report at a later date on the second coastal survey of the Snowdonia National Park held in September.

Bats

Turning to bats, as part of a joint project between the three Welsh National Parks and CCW, consultants have reviewed and brought together current information and practical experience on bat conservation. A draft report has been submitted for comments and the findings will be presented at a number of seminars in Wales at the end of 2004.

Frances Cattanach is Director of the North Wales Wildlife Trust and can be contacted on 01248 351541
fcattanach@wildlifetrustswales.org

Marine *matters*

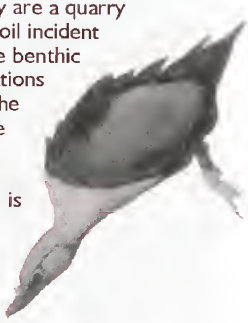
Ivor Rees reports on the problems facing scoters and shellfish in large shallow bays

Only recently have dedicated surveys from light aircraft revealed that a significant part of the north east Atlantic flyway population of scoters *(Melanitta nigra)* use Carmarthen Bay, northern Cardigan Bay and places around Greater Liverpool Bay. There had been intermittent sightings of large flocks of these diving ducks, but often they were too far out to figure in regular wildfowl counts. Being shot on migration through the Baltic, they also flee from boats, so surveys of seabirds at sea, using transect methods, do not allow for reliable population estimates either.

Outside the nesting season scoters are effectively seabirds, living almost exclusively offshore and feeding mainly on bivalve molluscs. They exploit shellfish from sandy sediments at water depths typically in the 5-15m range. Threats from offshore wind farms and changes to shellfisheries harvesting combine to give scoters higher conservation priority. To respond to this, studies are being conducted into feeding ecology and energetic modelling of the birds, and the fluctuating availability of suitable prey in critical areas. The Crown Estates Commission, as seabed owners, are to be commended for using the interest earned from bonds posted by developers for research into unresolved environmental issues posed by wind farms.

Sampling near the North Hoyle windfarm. Photo: Ivor Rees.

Shooting ducks for such studies would not be acceptable or practicable so prey preference has to be inferred from places where they are a quarry species, from post-mortems of oil incident casualties and from sampling the benthic communities at the precise locations where the birds concentrate. The abundance of bivalves which live in soft sediment often varies hugely in both time and space. Sparsely inhabited sandy ground is interspersed with very dense local patches of a single age cohort. This helps indicate the likely prey when flocks are seen diving in a small area. Birds can exploit dense patches of prey at locations varying from year to year, but it does make site based conservation more difficult. The use made of Carmarthen Bay by scoters has prompted its nomination as a candidate Special Protection Area under the Birds Directive. Offshore wind farms clearly require environmental impact statements under EU Directives. There is much less certainty about what controls ought to apply to shellfisheries.



Markets now exist for some of the bivalves that scoters feed on directly, such as kinds of trough shell, and for other larger species from the same shallow water habitats such as pod razor shells. In the 19th century, railways, giving access to inland markets, were crucial to the expansion of steam trawling. In our own time motorways and ro-ro ferries enable high value live shellfish from Welsh waters to reach consumers in Spain. Even without potential conflicts with scoters, perhaps displaced from preferred feeding locations by wind farms, major challenges exist for the fishermen, fishery regulators and the conservation agencies. Inshore shellfishing, mainly by small operators, cannot sustain the impact studies to meet EU rules.

It ought to be possible to harvest some of the highest value shellfish sustainably and without undue ecological impacts. This goal is held back by an overdue need for major revisions to fisheries legislation. Effort limitation is needed as well as existing technical controls on vessel or gear specifications. Clear interpretation of the increasingly complex array of wildlife conservation legislation in relation to fishing is also overdue.

Ivor Rees is a marine biologist and formerly was senior lecturer in Ocean Sciences at the University of Wales, Bangor.

Nature *at large*

Richard Wistow, ecologist at Rhondda Cynon Taff County Borough Council, takes a close look at bumblebees.

This summer, Fiona (my 4 year old daughter) and I have spent many happy hours catching bumblebees in our garden. I have 'flirted' with bumblebee identification for a few years, but with a bit of effort I have started looking with a more informed eye. It is an unavoidable fact that some insect identification can only occur by examining them under a microscope – this inevitably means killing the insect. For some reason killing a bumblebee has always seemed to me to be wrong. However, some of the key identification features are impossible to see on an actively bumbling bumblebee. The trick is to catch them in a clear plastic pot, insert a handkerchief and gently push this up into the pot until the bee is immobilised, but not harmed. This then allows clear and unrestricted examination.

Using the above, Fiona and I have recorded six species in our garden. There are three largish bumblebees which basically have two yellow bands and a white or whitish tail. Of these, *Bombus hortum* has its second yellow band covering part of its thorax and the uppermost part of its abdomen. It also has a longer face (which with a bit of observation is obvious). *Bombus terrestris* and *lucorum* both have their second yellow bands entirely on the upper part of the abdomen (not straying into the lower thorax). These are the two most difficult garden bumblebees to differentiate – terrestris is called the buff tailed bumble bee and its tail ranges from a definite brownish colour to white (but always with a thin line of brown along the interface with the lowest black abdomen section). *Bombus lucorum* has a pure white tail.

Bombus pratorum.

Bombus pratorum is my favourite garden bumblebee. A smaller species, it has variable yellow banding on its thorax and abdomen, but a distinctive orange tail is characteristic. Dozen and dozens of pratorums spent the end of May and first half of June feeding on the cranesbills, figworts, French lavender and raspberry flowers in my garden.

Bombus lapidarius is the commoner of the two all black bumble bees which have scarlet red tails. It has become common in my garden from early July (being scarce in the spring). *Bombus pascurum* is the common garden carder bee. These are all the tawny brown/orange bumbles you see. There are several rare species of carder bees including *Bombus humilis* (an RCT BAP species) and *Bombus muscorum*, both of which occur in species-rich grasslands.

In addition to my garden, I have been searching other places for bumblebees. During the Marsh Fritillary Training Day on May 29th, many of us were pleased to see the local abundance of flowering cranberry on a bog at the northern end of Tonyrefail. Equally pleasing was the small upland bumblebee *Bombus jonellus* which was feeding avidly on the flowers. Mark Evans has told me previously of another mountain bee, *Bombus monitocola*, which Mark gets on the mountain above his home in Cwmbach. This summer I have seen this superb bumblebee at Ty'n-y-bedw tip, Pentre and on the Hirwaun Industrial Estate Bog. The bumblebee has a single yellow collar and an abdomen which is at least two thirds red (with only a narrow black band on the uppermost part of the abdomen). This species is apparently in serious decline and, according to an article on bumblebees in *British Wildlife*, is due to be made a National Biodiversity Action Plan species.

The best book for identification is *Bumblebees* by Oliver E. Pryce-Jones and Sarah Corbet (1991, Richmond Publishing Co., Ltd. ISBN 0 85546 257 4). This year there is The National Bumblebee Nest Survey run by Rothamsted Research, Harpenden, Herts, AL5 2JQ (web: www.rothamsted.ac.uk, email rothamsted.bees@bbsrc.ac.uk, or phone 01582 763133 ext 2693). They have produced a beautifully simple survey form for the main bumblebee groups which is well worth getting hold of.

Bumblebees seem to be one of those groups of insects which gardening can really help. Recent work has suggested that the decline in flower rich foraging areas is the main cause in their decline. By planting your garden to provide a continued summer long source of nectar and pollen you will encourage the six common(ish) garden bumblebees and if you live on the edge of rhos pasture, or open hill or bog or ffridd you might well find some of the rare species also using your garden.

Hysbysfwrdd / NoticeBoard

If you would like your wildlife event to feature on this page please contact Mandy Marsh on 01248 385574 or e-mail m.marsh@ccw.gov.uk

Shared Earth Trust at
DENMARK FARM
28 Oct *Creating a Conservation Plan*
13 Nov *Managing for Wildlife Forum*
21 Oct *Nature Photography* (evening talk)
19 Nov *Practical Hedgelaying & Coppicing*
Tel: 01570 493358
e-mail set@denmark-farm.freeserve.co.uk
or www.shared-earth-trust.org.uk

The National Trust
RHODODENDRON MEGA-BASH
24-26 Sept Massive fires guaranteed. Camping at the foot of Snowdon £19 including food and entertainment. Bring a tent. Over 18s only.
Tel: 01766 890659 or email:
clive.price@nationaltrust.org.uk

Wildlife Trusts
FUNGAL FORAYS
16 Oct Pencelli Forest, Pembs
01646 601472
23 Oct Mynydd Mawr Country Park
Denys Smith 01558 822152
13 Nov Nant Fawr, Cardiff
Richard Cowie 02920 752673
ANNUAL PUBLIC LECTURE
9 Nov *The Red Kite – Britain Leads the World!* by Tony Cross, Civic Hall Llandeilo, 7.30pm, £1
WALKS AND TALKS
Contact your local Wildlife Trust for a full list of events this autumn and winter:
WALES
Brecknock 01874 625708
Gwent 01600 715501
Montgomeryshire 01938 555654
North Wales 01248 351541
Radnorshire 01597 823298
South & West Wales 01656 724100
BORDERS
Avon 0117 917 7270
Cheshire 01270 610180
Gloucestershire 01452 383333
Herefordshire 01432 356872
Shropshire 01743 284280
Worcestershire 01905 754919

Marcher Apple Network
APPLE DAY
17 Oct Baskerville Hall, Clyro, nr Hay-on-Wye, 2-5pm See our apples and bring your own for identification. Young trees for sale. Plenty of parking.

There are numerous **APPLE EVENTS** this autumn. **Please confirm full details from the organisers**, especially if you intend to travel some distance. See also
www.commonground.org
www.marcherapple.net

WALES
2-3 Oct Erddig, nr Wrexham
01978 355314 or
erddig@nationaltrust.org.uk
27-31 Oct Llanerchaeron,
nr Aberaeron 01545 570200 or
llanerchaeron@nationaltrust.org.uk

BORDERS
2 Oct Quince Day Norton Priory, Cheshire 01928 569895
2 Oct Hanbury Hall, Droitwich
01527 821214
3 Oct Quarry Bank Mill, Wilmslow
01625 527468
9-10 Oct Parishes of the Marcle Ridge
01531 670544
9-10 Oct Attingham Park, Shrewsbury
01743 708162
10 Oct Ryton Organic Gardens (HDRA), nr Coventry 02476 303517
enquiry@hdra.org.uk
www.hdra.org.uk
16-17 Oct Highfield Garden World, Whitminster 01452 741444
16-17 Oct The Cider Museum, Hereford, many activities 01432 354207
info@cidermuseum.co.uk
www.cidermuseum.co.uk
17 Oct Apple Day Norton Priory, Cheshire 01244 376333
23-24 Oct Westbury Court Garden, Westbury on Severn 01452 760461
Jerry.green@nationaltrust.org.uk or see www.nationaltrust.org.uk
23-24 Oct Snowshill Manor, nr Broadway
01386 842814

The Mammal Society
TRAINING COURSES
Dormouse Ecology and Conservation
2 Oct Hampshire
9 Oct Somerset
Dormice and Development
13 Jan Hampshire
15 Jan Somerset
20 Jan Swansea
22 Jan West Midlands
Small Mammal Ecology & Survey Techniques
29 Sept Brighton
Tel: 020 7350 2200 or e-mail
training@mammal.org.uk
Web: www.mammal.org.uk

Fenn's, Whixall & Bettisfield Mosses
AUTUMN EVENTS
10 Oct *Fungal Foray* on Fenn's Moss, Nook Lane Triangle 2pm Roy Mantle, Shropshire Fungus Group
www.britmycolsoc.org.uk
Sun 5 Dec *Christmas Tree Task*: celebrate International Volunteers' Day
Birds of the Mosses Slide Show
by J L Daniels
Tues 9 Nov – Edward German Room, Whitchurch Civic Centre 7.30 – 9.00pm
Wed 24 Nov – Town Room, Wem Town Hall, 7.30 – 9.00pm
All events except talks MUST be booked in advance by contacting Joan Daniels on 01948 880362 on weekdays, or 07974 784799 on weekends and are free unless stated
joan.daniels@english-nature.org.uk
www.english-nature.org.uk

Butterfly Guardian
TRAINING WORKSHOPS
are free but booking is essential.
Kelly Thomas 08707 706153
k.thomas.bcw@btconnect.com
www.butterfly-conservation.org
30 Oct *Leaf Miner Recording & Identification for Beginners*
10-4pm, Penhow, Gwent.

Gwent Levels Wetlands Reserve
GUIDED WALKS AND EVENTS
25 Sept *Birds & Migration*
Contact 01633 275 567

For illustrations, thanks to/diolch am y lluniau i: English Nature, Mandy Marsh, Alastair Robertson

Marged Niclas apple.
Photo/ffoto: Pauline Sykes.

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The easy answer to **Christmas** *shopping*

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